EARTH GARDEN

-natural living and growing

No. 4

A PLEASANT TREATISE ON THE HONEY BEE:
TOUCHING ON HISTORY, BEE-LORE, HONEY,
PRACTICAL BEEKEEPING AND THE SOURCES.

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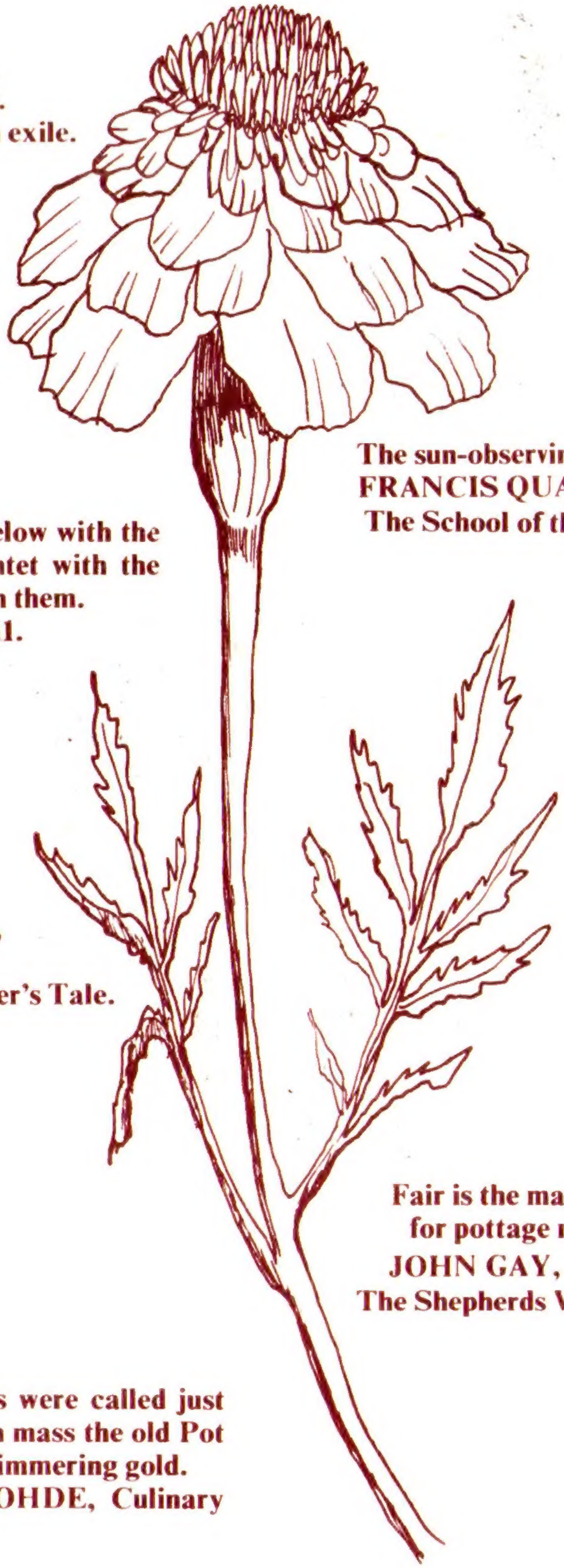
OF MARIGOLDS:

The gentle marigold follows the sun,
more than my subjects me have done.
Attributed to CHARLES II while in exile.



The sun-observing marigold.
FRANCIS QUARLES,
The School of the Heart.

Summe use to make theyr here yelow with the floure of this herbe, not beyng contet with the naturall colour which God hath given them.
WILLIAM TURNER, Herbal, 1551.

Here's flowers for you;
Hot lavender, mints, savory, marjoram;
The marigold, that goes to bed wi' the sun,
And with him rises weeping.
WILLIAM SHAKESPEARE, The Winter's Tale.

Fair is the marygold,
for pottage meet.
JOHN GAY,
The Shepherds Week (Monday).

Marigolds in medieval times were called just Golds, and small wonder, for in mass the old Pot Marigold looks like a sea of shimmering gold.
ELEANOUR SINCLAIR ROHDE, Culinary Herbs & Salads, 1940.

EARTH GARDEN No.4

EARTH GARDEN presents a range of natural lifestyles. It is intended as a key to sources, practical ideas, alternatives and self-sufficiency.

EARTH GARDEN is concerned with non-polluted living and growing, the back-to-the-earth movement, surviving in the city, the bush, food and diet and the inner changes which follow when you are in tune with Nature.

Let us lead you up EARTH GARDEN's path to the good life.

There are still no advertisements in EARTH GARDEN. Books, places and products recommended are those we think relevant.

Edited and published by Irene and Keith Vincent Smith.

Illustrations by Robyn Clarke.

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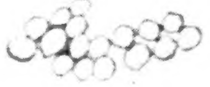
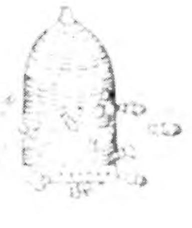




EARTH PEOPLE WRITE:

Dear Irene and Keith,

As soon as I opened the covering I got very excited to see such a magazine was being printed in Australia. Now, having read most of it (can't wait to write until I've finished), I must tell you that your paper has the best information and a message of hope and inspiration of all the organic mags I've read (and that's quite a few).

You're really not holding back anything for later editions, but letting the information flow now — which is wonderful.

Printing lots of letters is a great idea, because it gives people the wonderful feeling that they have kinfolk everywhere, and it's a place to share one's joys, hopes and problems.

The organic movement has been trying to emerge for so long now, and it's papers like your that are going to get the message across.

Love and happy days, Ros and John Smith (and Liza, 11, and Penny, 7), Terranora, NSW.

Dear Keith and Irene,

Last year I struck several rose cuttings and when I planted them out in June this year there were several chive, potato, onion and garlic plants close by. Need I say there has been no aphis or black spot and I intend carrying out this policy on a much larger scale in future.

I am an erratic, but enthusiastic, gardener and roses are my first love.

Would like to tell you of an experience I had some years ago. A friend and I visited a Polish gentleman who grew the most exquisite irises. He lived at Portsea, and, as his name was unpronounceable, he was generally known as Mr Iris.

He was elderly, of quiet contentment, and he had a quality that made him stand out among men.

With no embarrassment he told us that each night he walked up and down the rows of irises and quietly spoke to them, thanking them for the beauty they had shown that day. He firmly believed that they responded to the love and warmth of his voice.

I was so impressed that I, too, have put it into practice — especially with a shrub or plant that is not flourishing, encouraging it and saying I know that it can do better next season. I am sure they resent harsh words or noises.

Our soil is very stony and far from ideal here, yet we are known as the people with the lovely garden. You know how we all respond to kindness or words of encouragement, and I believe the plants do too.

May your good works fall on fertile soil — all the best for the future. May I, too, sign myself?

Peace and love, Joy Pearce, Diamond Creek, Victoria.

Dear Irene and Keith,

We both wish to thank you for all the information we have found in previous publications of your magazine. We hope that in the future we may offer more suggestions.

A little while ago, we wrote to Dept of Agriculture requesting information about donkeys and in time received a letter suggesting we purchase a small motor bike, so we can assure you it's really a blessing to know there is a more willing and reliable source for information we would like.

We support you in your work and thank you.

Yours, Merry and Nick, St Albans, NSW.

Maybe they were thinking of a moke, which is the name costermongers used to give to their donkeys! Hope our section on the gentle ass will help you both.

Dear Earth People,

I have found your books, EARTH GARDEN, the most delightful things to read. My husband, a bit slower to accept them, has been won over with The Art of Gardening (No 2) and can think of nothing better than to meet Neil Douglas.

Although I have been a keen gardener for most of my life, I wish I had been more aware of the natural recycle in my youth. I make baskets from rush reeds, and mats from used hay bands. Last year I became interested in tanning sheepskins, which make lovely mats, and are very popular with all members of our family.

Didn't know that so many folk had come back to Earth! Makes me feel alive to know that I have so many companions.

May your spread of the good word continue.

Yours, Marjorie Trease
Dumbalk North
Victoria

Dear Earthgardeners,

I have thoroughly enjoyed your magazine. It is very rarely that I read one from cover to cover, but I find each article quaint and charming.

Keep up the good work.

Marta Hamilton, Pascoe Vale, Victoria.

Dear Earth Garden,

Congratulations on a terrific magazine. I love the goaty items in EG3. We, too, had a goat named Annabelle, usually known as Cappie (short for Capella).

She now resides with Mrs Janet Middleton up at Rouse Hill, and is known as Bella! We were glad to find a good home for her because this place is too wet for goats, with no decent shelter, and the additional delights of the neighbourhood dogs, and poisons (agricultural) washing down from across the road. Cappie — I mean Bella — is now a mother too, I hear.

We also have a set of chooks — all roosters of course. Our two little pullets, needless to say, died, one of cat or fox, and her sister of DDT or suchlike. The roosters are thriving, of course, useless except for entertainment (they're a scream), as they don't lay eggs, though goodness knows they try to hard enough!

They resemble peacocks, pheasants, eagles and elephants respectively, and live like fighting cocks (fighting, crowing, digging and eating), truly living off the Earth as they have the run of the place and roost in trees. It would seem like paradise to those poor things that live in batteries, or whatever they call them.

Their old father, Fred, is a beautiful featherduster and is nearly ten years old. Anyone else have a ten-year-old chook? (Beginning to show his age.) We can't bear the thought of eating them. If anyone wants to try breeding golden peacock-roosters, the rooster-service is here!

If someone knows a cure for grasshopper plagues, please tell me, for they are eating all my basil and marigolds. (No, the chooks will not eat grasshoppers.)

Yours sincerely, Dawn White, Kellyville, NSW.

You'll see a few ideas on keeping down grasshoppers elsewhere, Dawn. Good luck!

Back to the Land

By Jill Rayner

It's a ridiculous feeling to have a great, unique idea and to discover that thousands of people have thought of it too and have beaten you to the post. That's just what happened to us.

We got the idea of homesteading, spent just about three months looking for our land (maybe we were just lucky there), then discovered the Last Whole Earth Catalogue, then Mother Earth, then Earth Garden, and now, only a few weeks after buying our land we've already met so many young people in the process of or planning to strike out for adventure.

We've met dome people, homestead people, co-operative people, organic people, pagoda people. And now we live in a wonderful world of new ideas, smiling faces and enthusiasm.

There must be lots of you out there wanting to DO something. Maybe you think your idea's a bit crazy, you've got nobody to talk it over with. Just START it. And before you know where you are you'll be surrounded by people just dying to help, wanting to join you or talk over their own plans. It's just like magic.

Let me tell you our story. It's only short so far, but we hope it will give you undecided ones an idea of what can happen if you swallow hard and JUMP!!

Tony and I arrived back from two years travelling in Europe with our tent, in April 1972. We headed straight back to clean quiet Hobart to recuperate from the bustle and madness of Europe. With only $100 in our pockets and eight weeks to go before we could find work, it was a slow start.

But we had this plan to get some land. Cheap! Within 20 miles of Hobart — though looking at our bank balance we were prepared to go into the wildest, most desolate part of the State!

By August we were saving well and still buying the occasional bottle of wine. By September we had our names down with every agent in town and we'd marked out all the cheap areas of the southern part of the State for buying land.

It seemed that south of Hobart was the best bet. North of the city was rich farming pasture and established farms, the east coast was expensive holiday land. So it looked like the D'Entrecastreau Channel area of the Huon valley. Lots of berry farms going broke there and plenty of bush in the hills.

We checked for Crown Land too. There was plenty for sale up in the north of the State, but nothing down here.

By this time we were getting a bit low. We'd saved $1000 and it looked like we'd be saving for the next ten years to be able to afford a ten acre block.

Then it happened . . . 132 acres for $2300. Wow!! Just what we wanted. Bush run, no buildings, no fences. But plenty of water. We raced down the Channel, couldn't find it. Rang the agent. He was out. The next day it was sold.

But the game was on. We knew our piece of land was out there, somewhere. They came thick and fast after that. Old houses with a few acres, old houses with lots of acres, then 17 acres Crown land for $200. Down we burned to the agent in Huonville. Well, she'd show it to us. It was on the top of a hill, had no water and no access. We said we were sorry but we couldn't afford to buy a helicopter.

But the day wasn't over. That morning she'd had come in 72 acres of bush for $2500. She'd take us to have a look at it. She was amazed we wanted to live in the hills. There was no electricity, no house, just a wooden hut, and the road was awful.

We got lost on the way — followed the wrong river. But we finally arrived at the gate. Another half-mile through the property, all bush, and we came to a big, solid, log bridge. Under that bridge flowed the most beautiful mountain river you have ever seen; giant boulders, manferns, waterfalls and pools.

Around the corner and up the hill, the bush gave way to grass, buttercups, white daisies and Australian lavender. And right on the top of the hill sat a little house. We bought it. We didn't have to go another step. This was it.

Over the next hour we just walked round the place in a dream. I think the woman from the agency thought we were quite mad. We kept discovering more and more. Two swimming holes in the river, a mineral spring with wild watercress, five cleared paddocks, two giant pear trees, horse ploughs and sledge, broken fences and lookout points.

We went back to Huonville in the agent's big fancy car, paid out our $200 deposit, signed the contract, met the owner and everything was tied up. At 4 o'clock we forgot our film festival ticket back in Hobart and went back to the little abandoned farm, just sat in the middle of it and grinned.

Now it's the end of November. We've paid our 50% of the price, got a bank loan on the other half over three years (it doesn't hurt too much) and we've been spending every weekend getting the house ready to live in. Cleaning out manure, tearing down the tar paper inside walls, putting in windows, patching up the floor, evicting swallows and digging the earth. The land hasn't grown anything but grass and underneath is the forest that once grew there.

We're still working in town, putting away our dollars buying tools and we plan to give up work and move onto the farm soon. We'll be looking round for part-time jobs in the Huon area to pay the winter bills.

And it's all ahead of us; the goats for milk, yoghurt and cheese, the chooks for meat and eggs, the garden for most of our food, bees for sweetness and a million sunflowers. We hope to use the plough again with a genuine, live Clydesdale, just for the fun of having a horse around.

We hope some people will join us as time goes on. Have their own piece of the land, build their own shelter, share their tools and labour in the communal paddocks, make pottery, furniture, anything that comes into their heads.

Our idea is to foster co-operation and maybe with quiet example of what man can do outside a competitive system, we can get a bit more life into this society of ours.

By the way, we called it Green Valley Natural Farm. Come and see us some time.

Love and peace,

Jill and Tony Rayner
Green Valley Natural Farm
Crabtree, Tasmania 7106

In Hobart, the Consumers' Co-operative Society is now off the ground, Jill & Tony Rayner report.

The Society is based on organic and whole foods and hopes to expand into other fields.

All enquiries to: Consumers' Co-operative Society, 22 Lynton Avenue, Hobart, or at the shop, corner of Patrick and Parliament Streets, Sandy Bay.

A LIFE

It has an air of pioneer-style living in the 20th century, with a rustic bark hut for visitors and an austere bush shower under a towering gum tree.

Fenced garden plots have been established in clearings in the natural bushland. In one garden patch there's a bark A-frame shelter, with books, a bed and preserves.

This is the 100 acre farm, "somewhere in New South Wales", where we talked to Ed about farming and gardening, and the peaceful way of life he has chosen.

Ed: You were speaking about self-sufficiency. I think now we'd be almost 90 per cent self-sufficient in the food that we produce. But I'd still like to develop further and become 100 per cent self-sufficient.

One of the things that I recall is that earlier I was spending much more time relief-milking. This enabled me to get extra income to buy certain hardware which was essential and it also enabled me to keep in touch with farming techniques elsewhere.

As time went on it's been possible to spend more time here. I prefer to be working in these surroundings rather than working far away from home.

Being a vegetarian possibly helps with the self-sufficiency aspect?

Yes, that's quite true. I feel that it's a healthy way to live. I don't miss meat at all. I used to occasionally take it when I was on farming contracts but, like many other things, I think that when one makes the change gradually there are no ill-effects.

But you do have milk and dairy products.

Yes, I haven't gone to the whole extreme of taking a vegan way of life. We do have two cows which are Jerseys and produce nice quality milk and it enables me to make butter and cheese.

OF PEACE

Evelyn actually has been living as a vegan for a few months now, so that she likes to get some of her protein sources from soya beans and sprouting chick-peas and various other things which are very high in protein.

Are these things which you can't easily grow in this climate?

Not easily, no. We are trying chick-peas for the first time and it remains to be seen just how well the harvest turns out.

The wildlife took quite a big share of the soya beans and this was rather discouraging to Evelyn as she had put so much hope into growing her own.

We were, of course, very pleased with the peanuts which we grew last year and we're doing quite a large area to peanuts again this year. One plot that you didn't see — out at the other end — would have almost enough peanuts growing to keep us supplied a whole year, if the wallabies don't clean them up too fast.

What do you do to deter the wildlife getting at them?

I have used electric fencing. This may be effective for a while but I think at present the wallabies are jumping over it. We have also used rhubarb along the boundaries so that, if the first bite the wallabies get is unattractive to them, they no doubt will proceed no further.

Onions, I think are quite unpalatable to most insects and animals, so that we've put an increasing area down to onions which, I find, although they grow fairly slowly, can be put down almost any time of the year — right in the heart of winter, for instance.

We're growing a variety which seems to be very prolific, known as the tree-onion. This sprouts a number of shoots which bend over on the top and take root in the soil, so that these will be the new onions of next season.

Are you doing anything in the area of companion planting?

Yes, with our tomatoes we've tried for the first time using sweet basil and, so far, it seems to be having quite a good effect. I think this area is fairly scarce on fruit-fly. We haven't been troubled by it a lot. It may be partly due to the large amount of bird life. However, with our tomatoes last year we were careful to boil any that were suspect immediately. Of course, we also boil quite a lot when we're preserving tomatoes, too, for winter, when there isn't very much around. We find things come almost to a standstill in growing at that time.

As you can see up there, there's quite a few preserves, and down in the A-frame, too.

What tides you over in the winter?

Root crops are, of course, still coming on slowly and there are peas. Broad beans can be grown, but they do prefer a limey soil which our soil is not. Of course, we can store a few potatoes, too. We've got quite a large area of potatoes. Corn, too, can be kept in jars and then ground up for bread or to provide chook food just as required.

You do your own bread-making?

That's right, yes. It's a mixture of wheat and cornflour, with dill or carroway seed, which can be grown here. We do hope to put in some area to rye this autumn, which makes a very fine textured bread. I believe rye isn't grown very much in this country and I feel there could be good opportunities as rye loaves do sell at quite high prices in delicatessen shops.

Among the other things which help you are poultry and ducks, so you get duck eggs, we presume?

Yes, the ducks lay large eggs and I think their flavour is perhaps a little strong, but not inferior to the chook egg.

Then there's the two cows and the bees. We saw three hives.

That's right. There is another hive in the orchard which is just in its early stages. That's to help pollinate the trees.

I think the water is a bit of a problem right now. We have been limited very much in our planting and cultivation by the shortage of water, but it's been interesting to see that some of the crops at the other end, where no irrigation has been provided at all, look more healthy than those which have been watered occasionally.

This may be partly due to the fact that no water is better than a little water, because it encourages roots to come to the surface.

Were you hit by that very hot snap just before Christmas?

We had some very hot winds, which took a toll on some of the orchard trees. One thing which we'll have to learn by trial and error is just what can cope with drought conditions. It's fairly obvious that the Chinese gooseberry is one of them that needs constant heavy watering.

In your methods of gardening then, you use compost. Do you mulch?

Yes, we've tried mulching with slate, too, as we heard that in desert conditions some of the trees in Israel have been mulched with stone. But, as we like to use the slates for other purposes as well as for flooring, we use other mulch materials such as bracken and mown grass.

In our composting we use quite a variety of materials, too. If we can get seaweed, we're very happy to use it. Fish-heads, stinging nettle, bracken, chook manure and, of course, cow manure, and horse manure occasionally.

Do you allow the manure to become rotted first?

Well, we try to adopt the Indore system where, as we don't have a lot of wood ash to spare, we usually mix in layers of soil with the layers of bracken and manure. This may take a bit longer to decompose than the ideal heap.

How long does it, in fact, take?

Five or six months, depending partly on weather conditions. We have recently set up a compost bin according to the gospel of "Saint" Lawrence Hills (L. D. Hills of the HDRA — see EARTH GARDEN No 3). So we have one box in the making and one maturing. This, I'm sure, will be a more rapid process and, in addition to that, I'm using it as a seed box to develop capsicums, which need the extra heat. It enables me to both water the capsicums and water the heap at the same time.

It can be a very satisfying thing to be able to produce good compost that's got tribes of earthworms . . .

Rodale says you should be able to eat it.

Yes, I have heard this said about it, too. Maybe if the earthworms enjoy it so much it can't be all that bad.

Kitchen scraps — do they go on the compost?

Oh, indeed. Any used vegetables. Sometimes I put in whey from the cottage cheese, too, which will help activate the bacteria. I try not to waste anything at all here.

When one thinks of the millions of people that are on the verge of starvation or actually starving, this is one reason why I have chosen to live this simple life — so that I feel there's not such a big difference between myself and those that have no choice but to live in a very dire condition.

Is that entirely your motive for leading this kind of life?

There is another motive, too, yes. I like to maintain my income at a non-taxable level in order to avoid paying for war. This I've been doing for about five years now.

Was this induced by Vietnam particularly?

Well, I am opposed to all war, but I do feel that Vietnam is a particularly wicked, dirty war, in which Australia has taken a particularly wicked part. But I do feel that any form of preparation for war is undesirable and, in fact, preparing for war generally leads to war and so I feel that as long as there is money being spent in this way I'll continue to maintain my form of tax refusal.

It's not easy for the average person who has pay-as-you-earn deductions every week. The only possible way is for him to donate such portions of his income every week to tax-deductible relief organisations, to bring his income to a non-taxable level, and then he'll receive all the money back from the Taxation Department that he gave in the form of tax refunds. This I did in one previous year and it is perhaps one of the things which makes you question everything that goes on. One has to examine very closely, and budget very closely, everything that passes through your hands.

In time, then, do you think you'll achieve a self-sufficient way of life? Do you think it's possible?

It's possible, but one has to be resourceful and I think if one is ready to learn from other people's experiences and just see what's going on around you, this will perhaps make it possible.

This requires a great deal of self-reliance and discipline from yourself, doesn't it?

It does, and sometimes when there are people around that just enjoy luxuries which I feel it wouldn't be possible for me to indulge in, it means that there is a barrier between us. It may mean that it's impossible for them to continue to live here permanently and so this can be a bit discouraging at times. People that I have a great liking for and are very practical and useful to have around . . . it's just one of the things that I think one has to face in living a simple life — that you've got to get to be simple all the time or else give up.

Do you think a community will achieve for themselves a self-sufficient way of life quicker than the individual?

Yes, I hope so. There are many things which I am not skilled in and I would like to see people with different trades and abilities that may be able to help out. It's a very small community in its present state and I would like to see it grow.

When you first came here what did you find was the hardest thing about living this life?

I think it was the lack of protection from wildlife, which made big invasions. Previously I'd been on a farm near Liverpool where the rabbits and other types of wildlife had been practically exterminated. So this was a big challenge. We had to put up a lot of fences quickly, which did make some improvement, but even now there is quite a problem in this direction.

Of course, as I said, other people found that lack of amenities was very serious. Not having a bath, for instance. I find that the river is just as good as any bath and even in winter-time I quite often take a cold shower.

I don't think we showed you the bush shower which has been put up. It's very ingenious. It consists of two 44-gallon drums, one which is held over a fireplace and the other one is stationed up the tree. After the fire has been lit and the water is running slowly through, it can provide hot and cold water for anything up to 20 people.

It's really quite an experience to be able to shower by moonlight with all nature around you. It's a marvellous experience.

Getting back to the idea of a community. Have you got any kind of model you see as viable?

Well, I wouldn't like to see this place become too commercialised, or too large. I'd like it to retain the pioneer atmosphere that seems to be present now. I think, perhaps, the ideal number of people might be ten to a dozen. I think at this stage single people would be preferable to families. Children, obviously, do take a lot of attention and can be a liability when things are of a haphazard nature.

And in the future?

In the future perhaps you'll find that some new line will present itself, like orcharding or beekeeping on a larger scale, which will keep people more profitably occupied than they could be now.

This will probably come with experience, trial and error. When I mentioned orcharding I was thinking of propagation of new fruit trees. Owing to the limitation of flat land here, another line might be mushroom growing, which could be done in a couple of A-frames in semi-darkness.

Do you enjoy your food?

I've been encouraged to find what good bread I can make. I used to think that no bread was better than what Evelyn made, but she's been a good teacher to me and I find that mine seems to turn out just as well.

Have you reached a balance of the tasks between the sexes?

Yes, I think we have tried to take equal shares in most of the chores and it's really been remarkable what work Evelyn has been capable of, many things that I wouldn't think a woman could tackle. She's taken many people by surprise by her vigour and enterprise.

Two years ago she was tapping a typewriter in the city and then a few months later she was driving a tractor, milking a cow and so on.

Note: Unfortunately we lost a large section of our interview at this stage because of a faulty tape. It covered the crops Ed grows and companion plants and picks up with Ed talking about the book, Companion Plants by Helen Philbrick and Richard Gregg:

Yes, I believe Companion Plants was written for European conditions, or under European conditions and mostly it was compiled in that light so it's possible that some things will have to be adapted here. Some things aren't mentioned at all in Companion Plants and we'll just have to find what goes and what doesn't go.

I believe stinking roger is supposed to be good with citrus trees. It destroys nematodes. Unfortunately I don't know whether it was the nematodes or whether it was the drought — we did plant some stinking roger close to a Washington navel, but it may have been just too late.

We also like to use the stinking roger, or African marigold as it's sometimes known, as a tea. I think it's quite pleasant in small doses, but there's another one I like to mix, called Australian heather. We also use camomile occasionally.

We've been using the Henry Doubleday garlic spray and I'm inclined to think that if it's left to stand several weeks before it's used it's more effective. The first time we used it directly after making it up it seemed to have very little effect on the potatoes, which we were treating for the yellow ladybird, which eats the foliage. If it's left a few weeks it gets a stronger odour and it's more potent.

We used it on a few of the fruit trees, too, for curl on the peaches. I don't know if there was any marked improvement there, either.

Have you found any big problem with a particular crop?

Yes, I would say that broad beans are the most disappointing. I like broad beans very much because they're such a big bean and they grow in winter, when so little else can. I think it's mainly due to the acidity of the soil, which they can't stand.

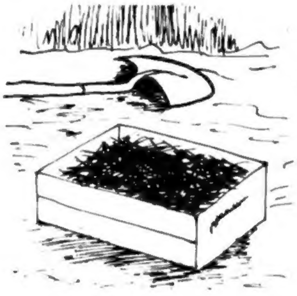
Try growing spuds in a box filled with straw and manure. You can use pine needles, leaves, hay or any other kind of mulch you may have around. There's no need for soil at all.

This way you can grow potatoes in a window box, on the verandah or in a roof garden. A pot is okay, but will limit the size of your crop.

Just lay the whole or cut spud in the mulch. When it sprouts the roots aim for the humus at the bottom of the box and the leaves seek the light above. The tubers grow right in the mulch and are not subject to any soil-borne diseases.

Water regularly. When the leaves turn yellow and start to drop off, there should be some clean, scabless potatoes waiting to be harvested

mulch spuds



Growing fast in Tasmania

DAVID STEPHEN atop TASMANIA'S biggest compost heap — 12 feet of seaweed and spoiled hay.

The Organic Gardening & Farming Society of Tasmania is the fastest-growing "natural living" group in Australia.

A few months ago it did not exist, but now there are branches throughout the State. The impetus has come from a solid core of committed younger people, who are concerned about food pollution and who are working to establish a market for organic produce in Tasmania.

First steps to form the OGFS of Tasmania were taken by David Stephen and his wife Helen. They are both vegetarians and their reasons for concern are pretty well summed up in the statement they sent to **EARTH GARDEN:**

"We are concerned about the cash crops of small fruits, vegetables and beef cattle which are slowly replacing apple orchards in Tasmania, particularly in the Huon Valley, known to have some of the most-polluted soils in the world.

"Consider how saturated the ground must be with poison from up to 15 different spraying programmes each season for 20, 30, 40 years!

"Raspberries, strawberries, potatoes, hay etc are being marketed in Hobart at the moment. Nobody questions the produce. We think it's time we did."

The Society hopes to get its own plot of land to use organic methods and show people "how it's done". They want to educate the public in the value of organic wastes for composting and the recycling of sewage and garbage.

We've just seen the OGFS of Tasmania newsletter No 2 (Dec/Jan) and have to say it's one of the most informative around. Send 7 cents to editor David Stephen for a sample and see for yourself.

Weeds are known to be good indicators of soil conditions. For example:

Bracken — Grows on soil lacking in potash, yet it is able to concentrate that same element in its fronds from this deficient soil.

Daisies — Concentrate calcium in their tissues. (They appear on calcium-deficient soils!) When soil has become sufficiently enriched with calcium, the daisies disappear.

Lupins — Have the power of gathering zinc.

Nettles — Manage to extract lime (calcium) from acid soil.

All legumes (lupins, peas, beans, clovers etc) have nitrogen-fixing bacteria forming nodules on root systems.

— Frank and Ruth Mather in The Organic Gardening & Farming Society of Tasmania Newsletter No 2.

On a more social level, the Society will help natural farmers and gardeners with tips, contacts, literature and swapping cuttings. Membership is $2.00 annually. Write to the Hon Secretaries listed:

Hobart: David Stephen, 12 Delta Avenue, Taroona 7006.

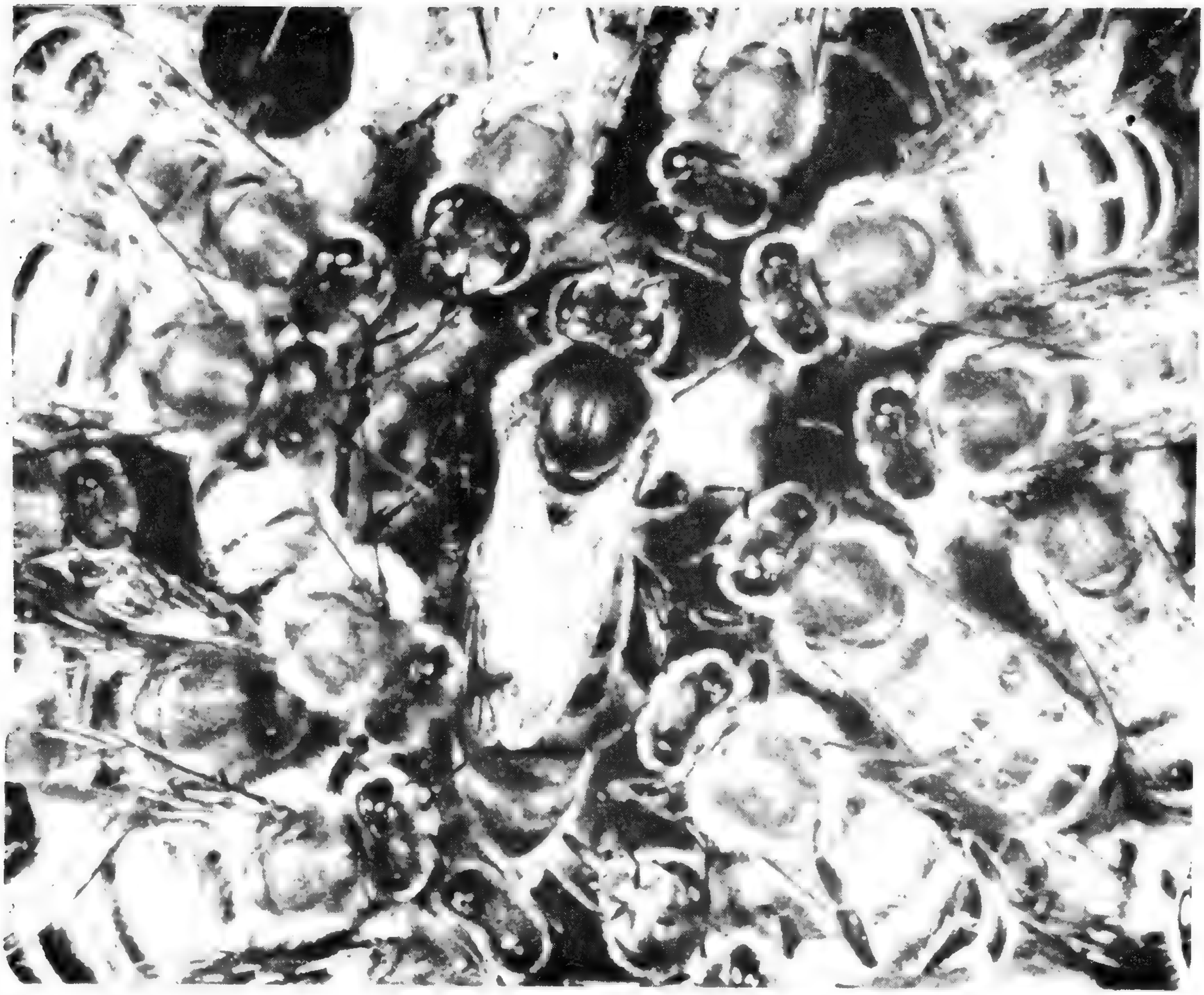
Launceston: Adrian Holmes, PO Box 1281, Launceston 7250.

Devonport: Mrs M. Hooper, 163 Madden Street, Devonport 7310.

West Tamar: Mrs Eileen Cummings, Blackwall Road, Exeter 7251.

For mainland readers interested in joining, write to the headquarters of the OFGS.

Hon Secretary, Mr J. S. Grierson, Box 2605W, Melbourne, Victoria 3001.



THE HONEY BEE

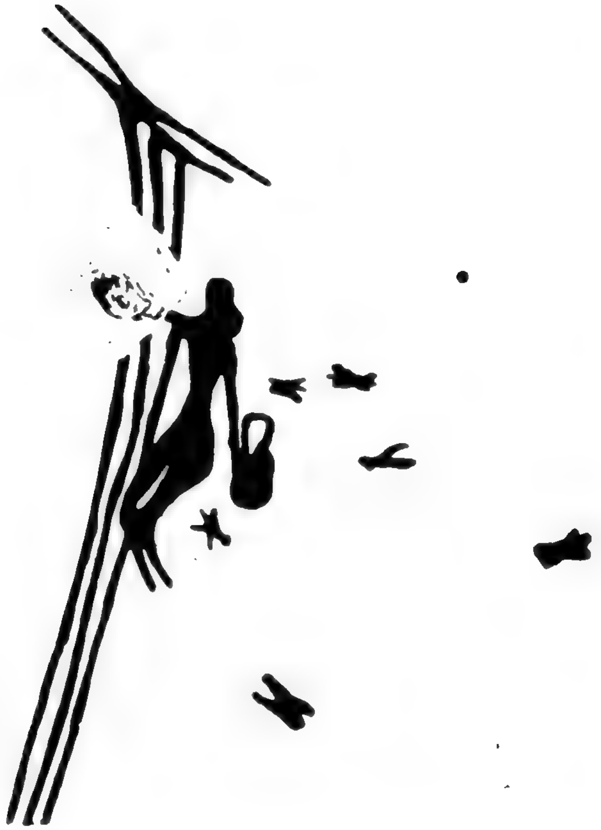
Bees existed hundreds of millions of years before human beings.

They are as old as the first flowering land plants which appeared among the reeds and ferns on this Planet some 250 million years ago.

Bees fossilised in amber have been found on the shores of the Baltic. The fossils, dating from the carboniferous age, have banded stomachs and look very much like today's honey bees.

Primitive man gathered honey from wild bees nesting in hollow trees and rocks. It was a food before bread, milk or cereals.

In the following pages we offer a pleasant treatise on the honey bee, covering history, bee lore, practical beekeeping and a guide to the necessary sources.



The oldest graphic evidence of man's involvement with bees and honey is recorded on the walls of the Cuevas de la Arana (the Spider Cave) at Bicorp, in the mountains near Valencia, Spain.

Red paintings on the cave walls have been dated at 15,000 BC.

One of these shows a human figure climbing up long ropes to a bee colony which appears to be housed in a cliff. The person is gathering wild honey and collecting it in a basket.

A group of bees, depicted much larger than life-size, is clustered about the hive robber.

Written records show that by 3,000 BC migratory beekeeping had already begun in Egypt. Hives were stacked on rafts and ferried north up the Nile to take advantage of the first spring blossoms.

An Egyptian papyrus of the same period tells, in a petition from a Greek official named Zenon, how donkeys were used to carry migratory hives. (This is also one of the earliest known references to donkeys).

Bees were much revered in ancient Egypt. The bee was the hieroglyph used to denote the kings of Egypt and was the name given to Lower Egypt. Honey was used during the marriage ceremony, in cakes and for embalming.

The Rig-Veda, written in Sanskrit about 3,000 BC often mentions honey. Vishna is represented as a blue bee resting on a lotus blossom. The Incas offered honey to the sun.

Bees and honey were mentioned in the earliest Sumerian and Babylonian cuneiform tablets. In Assyria, between 2050 and 1950 BC, the bodies of the dead were smeared with bees-wax and buried in honey.

Honey is mentioned often in the Bible — as food, medicine, an ingredient of drinks, a gift and a valued possession. The expression "a land flowing with milk and honey", describing the promised land of Israel, occurs 21 times in the Bible.

Then there is King Solomon's exhortation: "My son, eat thou honey because it is good; and the honeycomb which is sweet to thy taste".

Bees and honey played a prominent and solemn part in the mythology and everyday life of ancient Greece.

Ambrosia was the food and nectar, the drink of, the gods on Mount Olympus. Both were made from honey. Zeus was reared on honey and goat's milk. Apollo's son, Aristaeus, built the first beehives, made cheese and cultivated the olive.

Robert Graves in The Greek Myths (Pelican paperback) says the science of beekeeping came to Athens from Minoan Crete, where professional apiarists had a bee and a glove as their trade device and used terracotta hives.

Terracotta hives unearthed at Phaistos in Crete and dating to the Minoan period are almost the same as those still in use in the area.

Daedalus, who built the labyrinth at Knossus, is said to have made a solid gold honeycomb as a votive offering to Aphrodite. It was his son Icarus who fell into the sea and drowned when he flew too near the sun and melted the bees-wax which held together the feathers of his wings.

On a more down-to-earth level the ancient Greeks used bees-wax for repairing stone statues, making bronze figures and coins, for lighting, for writing tablets and for embalming.

Mt Hymettus, covered with thyme, provided Athens daily with fresh honey. By 750 BC the Greeks were using bars in hives and there were regulations against overstocking.

In the Greek islands and colonies, coins issued after 500 BC often carried a bee emblem. It was about this time that Democritus and other philosophers mentioned the false idea of bees swarming from the bodies of oxen. Virgil later used the same story, which persisted for centuries.

The Greek philosopher, Pythagoras, lived to a ripe old age, and attributed this to his regular habit of eating honey. Hippocrates, the father of medicine, prescribed honey for a long life. Aristotle scientifically observed bees and wrote about them in his book on natural history in 344 BC.

"I sing of honey, the heavenly ethereal gift." So wrote Virgil, the Latin poet, who also appears to have been an observant, serious smallholding farmer.

Virgil's beekeeping advice compares soundly with the practices of modern apiarists. He recommends that bees be kept in a shady corner, out of the wind and where goats and cattle cannot intrude. Virgil also suggested that stones and wood be placed in water so that bees can rest there while drinking.

The Roman banquets we hear so much about were often celebrations of the honey harvest. Guests drank mulsum (a mixture of wine and honey), ambrosia (honey and milk) and hydromel (honey and water).

Honey was used for barter and exchange throughout the Roman Empire. The natural historian, Pliny, devoted many chapters to honey in his "Historia Naturalia".

"These Islanders consume great quantities of honey," wrote Pliny. The islanders he referred to were the British, and the brew was mead, which remained the traditional tavern drink until the 17th century.

The Druid Bards knew Britain as the Isle of Honey. When Plutarch landed in Britain during the Roman occupation he reported: "These Britons only begin to grow old at 120 years of age". In those days there was no beet or cane sugar. Honey was the universal sweetener.

The Romans were surprised to find that bee keeping was an established industry and every village had its bees in skeps of wattled osier or woven basketwork.

Mead was the popular drink in Scandinavia also, and the word "honeymoon" originated in the days of the mead drinkers.

Ibn-al-awam, who wrote a "Book of Agriculture" in the 12th century in Seville, Spain, was one of the most original writers on bees in Medieval times.

He knew the worker bees were females, but it is doubtful if any of his knowledge seeped through to the West before this century.

The Koran says that the bee is the only animal to which Allah spoke. The Koran has a whole chapter named for the bee, and we were delighted to find the following quote in our copy of The Alcoran of Mahomet, which was the first translation into English in 1688:

"The Lord inspired the Bee to dwell in the Fields, to lodge in Trees, in Hives, and to eat all sorts of Fruits, it produceth Honey of divers colours, that serveth for a remedy to the diseases of Men." (From The Chapter of the Bee).

During the Middle Ages the Church required large quantities of bees-wax for candles and tapers used in services, so each monastery and abbey had its own apiary.

Bees-wax was commonly used to pay for land rental or as a tribute.

Throughout history there has always existed a general ignorance, and at times, a controversy, over the sex of the hive ruler. The life pattern of the bee community has often been used as propaganda, true or false, to suit man's own fickle beliefs.

The Greek historian, Xenophon, writing in about 400 BC, considered the guiding brain of the hives was the queen and said about her. "While she stays in the hive, she does not allow the bees to get lazy, but sends out those that have to work outside, observes what they bring in, takes it and stores it until it can be used".

But in the Middle Ages, when the leader of the colony was thought to be a male, the "King" of the bees was used as the model of a kingdom, where only one king could rule. Others spoke about "the parlyment of bees" and thought the hive democratic.

Shakespeare evidently believed in masculine authority and so, in Henry V, has the Archbishop of Canterbury, describe him:

> ". . . They have a king, and officers of sorts:
> Where some, like magistrates, correct at home;
> Others, like merchants, venture trade abroad;
> Others, like soldiers, armed in their stings,
> Make boot upon the summer's velvet buds;
> Which pillage they with merry march bring home
> To the tent royal of the emperor:
> Who, busied in his majesty surveys
> The singing masons building roofs of gold . . ."

The priests were only too ready to seize upon the virgin birth of drones by unimpregnated worker bees to back up the theory of parthogenesis.

The "Exultet Roll" of A.D. 1,000 praises the bees, "who produce posterity, rejoice in offspring, yet retain their virginity".

Illustrations from the roll show (top) bees on a plant, (middle) in a hollow log hive, and (bottom) on the combs.

Belief in the "Bee King" was challenged by Charles Butler, the rector of Wooton, in "The Feminine Monarchie", written in 1609.

"We must not call the queen 'Rex'; the Bee-state is an Amazonian or feminine kingdom." Butler stated in the preface. A very early supporter for the recognition of the role of women!

The vexed question was finally settled scientifically by Jan Swammerdam, born in Amsterdam in 1637, who determined the sex of the queen by dissection.

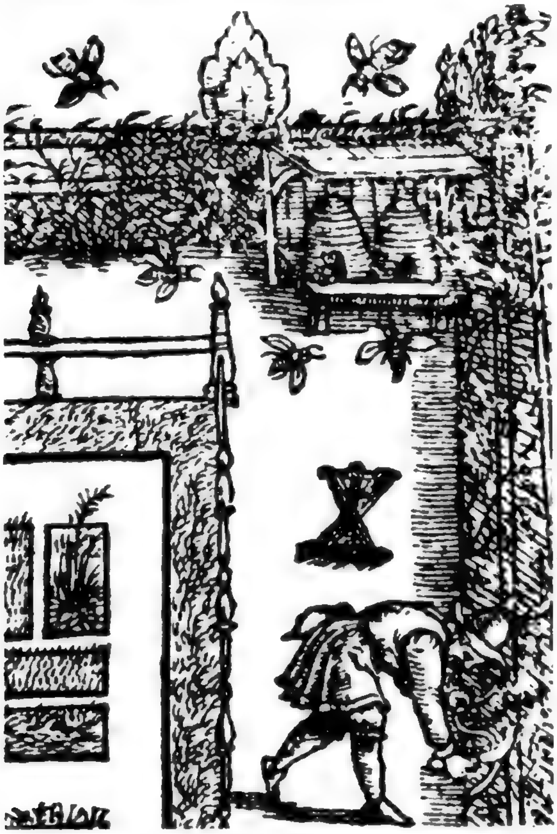
Despite this, Moses Rusden, who was Charles II's bee master, still referred to the chief bee as the king, perhaps in deference to his ruler, who after all was a man. Rusden kept glass-windowed observation hives in the Royal Beehouse at St James's Palace.

In Tudor and Stuart times bee-lore was passed on in the books of the famous gardening writers, who wrote the popular "best sellers" of the day.

At that time, in Britain, a garden without bee skeps would have been rare. Beekeeping was a cottage occupation and the practice of "telling the bees" of the death of their owner was widespread. The new bee owner

The owners of Hives have a perfite forsight and knowledge what the increase or yeeld of honye will be in every yeare, by the plentiful or small number of floures growing and appearing on the Tyme about the Sommer solstice.

For this increaseth and yeeldeth most friendly floures for the Bees which render a coloure and savoure to the Hony.



Thomas HYLL, The Profitable Arte of Gardening, 1568.

Store of Bees, in a dry and warme Beehouse, comely made of Fir-boards, to sing, and sit, and feede upon your flowers and sprouts, make a pleasant noyse and sight.

For cleanly and innocent Bees, of all other things, love and become, and thrive in your Orchard.

If they thrive (as they must needs if your Gardiner be skilfull, and love them: for they love their friends and hate none but their enemies) they will besides the pleasure, yeald great profit, to pay him his wages.

You need not doubt their stings, for they hurt not, whom they know, and they know their Keeper and acquaintance.

WILLIAM LAWSON, A New Orchard and Garden, 1618.

usually did this by reciting a rhyme over the hives, or singing the bees a song. The best honey was considered to be that collected from a hive immediately after a rainbow.

Thomas Hyll added a treatise on "The marveilous Government, propertie, and benefite of the Bees, with the rare Secrets of the Honny and Waxe" to his "The Profitable Arte of Gardening" in 1568. This popular work was reprinted in 1572, 1574, 1579, 1586, 1593 and 1608.

Said the author:

"I have joyned this little treatise unto my boke of Gardening, for that most men doe joyne theym both togyther, as when they place their Bees in their Gardens, where as they may with less payne, and easilier gather of the sweet smellyng flowers, their Hony and waxe".

French bee keeping lore was introduced to England in Maison Rustique, or The Countrey Farme, which went into thirty editions after it was translated in 1600.

William Lawson's, A New Orchard and Garden, published in 1618, included a section on "The Husbandry of Bees, with their severall uses and annoyances".

The development of the beehive roughly followed the evolution of man from hunter to herder and from bee-robber to apiarist.

Virgil wrote: "Bees in hollow oaks their honey hide", and the stoppered hollow logs still seen in many parts of the world today would surely have been among the earliest types of beehives.

Then came the earthern and mud tubes, laid on their sides as in Egypt, or set in stone walls as in Greece, the Roman cork and reed hives, terracotta crocks and, eventually the picturesque straw and willow skeps.

In 1590 bar hives and movable combs were referred to in a book by the Italian Giovanni Rucelli. This was the same year in which the Janssen brothers invented the microscope, the instrument which later opened the door to valuable research on the life of the bee.

In 1655 Maroldi, an Italian, invented a single-comb observation hive with glass sides.

A growing interest in the science of beekeeping was reflected in the establishment by the Empress Marie Theresa, in 1769, of the Apicultural College of Vienna. In 1771, her royal beekeeper, Janscha, was the first to discover that queens mated away from the hive.

In Geneva, Switzerland, Francois Huber, a scientist who had been blind since the age of 15, carried out a remarkable series of experiments. His "eyes" were provided by his wife, Marie Lullin, and by his servant Francis Burnens.

Huber confirmed that drones impregnated the queen while on the wing and established that a single mating made her fertile for life. He discovered that bees ventilated the hive and that nectar and honey (not pollen) were the true source of bees-wax. An account of his studies between 1792 and 1814 were published as "Nouvelles Observations sur les Abeilles".

Huber's invention of the leaf hive in 1789 to assist his experiments led directly to the standard hives now used. His hive contained 12 frames, each 1¼ inches wide, connected by hinges like the leaves of a book.

Burnens, Huber's servant, was so devoted, he is said once to have spent 11 days examining separately all the bees in two hives at his master's instruction.

Modern standard hives with movable frames were

FRANCOIS HUBER

developed by an American Congregational pastor, the Reverend Lorenzo Lorain Langstroth, about 1851. The hives were handled from the top.

A German, Dr Dzierzon, who discovered "virgin queens", developed a movable frame hive at the same time, but access to the frames was from the rear of the hives.

Langstroth, born in Philadelphia, is commonly known as the "father of American apiculture". He bought two colonies of bees in 1837 and later became a breeder of Italian queens at Oxford, Ohio.

The honey extractor is said to have been conceived by a Major de Hruschka at Dulo, near Venice, in 1865, after he noticed that honey drained from a comb swung about in a basket by his son.

The British Bee-keepers' Association was established in 1874.

Ernst Spilzner, a German, observed in 1788 that bees returning to the colony loaded with nectar appeared to dance at the hive entrance.

It was left to another German, Karl von Frisch, a major researcher of the 1930s, to establish that this "dance of the bees" was a series of movements executed by scout bees to indicate to fellow workers where blossoms could be found, and even what type and quantity they were.

Working in the Munich Botanical Gardens, von Frisch found that bees could see most colours except red (they will often ignore red blooms), and are able to perceive ultra-violet rays invisible to man.

Members of a colony will often visit 250,000 blooms in the course of one day's work, he found.

Further reading.

Beekeeping in Antiquity, H. Malcolm Fraser, University of London Press, 1931 (reprinted 1951), 145 pp.

The Sacred Bee in ancient time and folklore, Hilda M. Ransome, George Allen & Unwin Ltd, 1937, 308 pp.

The ideal site for a beehive:

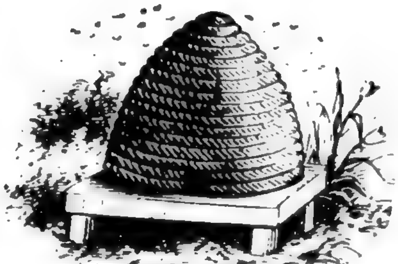
"...a place open to the South sun and yet notwithstanding neither exceeding in heat nor in cold, defended from windes and tempests, so that they may flie their sundrie and severall waies to get diversitie of pastures, and so againe may return to their little cottages laden with their composition of hony...

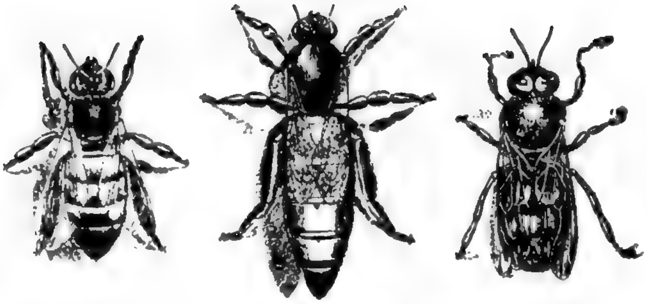
The place must be closed with a very strong hedge or else with good wals, for feare both of beasts and theeves: for kine and sheep do eat up their flowres, and beate the dew off from the flowres, whereof the bees should loade them...

...but of all home and tame beasts, there is none that doth so damnifie these little pretie wretches, as swine and goates; for the goates waste their food, and jumpe against their houses, yea and oftentimes beate them down; the swine besides the wasting and eating up of their foods, rubbing themselves against the hives doe overturn them and the seates whereon they be set...

Let the bees place of abode be neere some small brook of water naturally and of it selfe continually running, or else by art in some pipe or chanell, that will convey along the water drawne out of some well or fountaine, and this rundle must have by the edges stones or boughs of trees for the bees to light upon.

CHARLES ESTIENNE and JOHN LIEBAULT, Maison Rustique, or The Countrey Farme. Translated into English by Richard Surflet, 1600.





Left—worker; centre—queen; right—drone

The honey bee (Apis mellifica) is related to the "wild bees" and may have evolved from the same primitive prototype.

Several types of "wild bees" still exist, including solitary bees, mason bees (which cement stone fragments with their own saliva), the hairy Humble or Bumble bees (Bombidae) and the Melipondae — stingless tropical bees such as the giant Indian bee and the native Australian bee, Trigona Carbonaria.

Honey bees belong to the order Apis Hymenoptera, named for their four membranes and gauzy wings. They have three pairs of legs and two pairs of wings.

The bee wears its skeleton on the outside of its body like a jointed suit of armour. Its jaws are hinged at the side and bite inwards.

The worker bees, which make up the majority of the colony, may only live six weeks. In winter, they may survive six months, but when the nectar is flowing they literally "work themselves to death" with their strenuous foraging.

Honey bees are part of a highly developed insect community. Each colony has three castes — queen, workers, and drones.

The bee develops through four stages — the egg, the larvae, the pupa (a cocoon), and, finally, the adult. The queen is the perfect insect, fully developed and comes from a worker egg, which, after hatching, is fed on royal jelly.

The queen is the focal point of the hive, and the largest bee. She has a life span of four or five years and can lay one egg a minute, day and night. She may lay 3,000 eggs in 24 hours.

Twenty-one days pass between the laying of an egg and the emergence of a worker bee. A queen is made in 16 days and a drone in 24 or 25 days.

The queen lives in the hive on a mating flight within the first ten or twelve days of her life. A queen not mated by drones can still lay eggs, but the progeny of these "virgin queens" are only drones.

The queen leaves the hive on a mating flight within against a rival queen, which she will not tolerate in the same hive. They will fight and destroy cells until only one queen survives. Sometimes they will avoid a fight by going out with a swarm.

Fertilized eggs become worker bees. These undeveloped females make up the majority of the hive population. There may be 30,000 to 60,000 workers in a hive, with just a few hundred drones.

Workers feed the young, gather the nectar from the flowers to make honey, collect pollen and water and guard and defend the colony. They clean the hive and keep the air sweet and the temperature even by fanning with their wings. They secrete wax and build combs.

A dead mouse or snail in the hive will be sealed over completely by the workers, using propolis or "bee glue". This is a sticky, resinous substance gathered from the buds of trees. It is used to fill up all holes and cracks in the hive, particularly before winter.

Pollen is the protein and fat portion of the diet of adult bees and larvae. It is collected by the workers in the Corbicula, or "pollen basket" on their hind legs.

Drones are the males of the species. They have no sting and cannot collect honey or pollen. They cannot make wax. Their sole purpose is to fertilize virgin queens. Drones are larger than worker bees and get their name from the loud buzzing noise they make.

Drones are larger than worker bees and get their name from the loud buzzing noise they make.

feed the drones and regulate their life-span.

In the autumn drones are driven from the hive, killed or starved by the workers.

The male bee's "goggled" head is nearly all eye — 12,000 to 16,000 facets all merged into a single eye. Drones are bred selectively to strengthen colonies.

If you are stung by a bee:

- **Quickly scratch out the sting with your fingernail as soon as you feel it.**
- **Do not squeeze it with your finger and thumb as you would a thorn or prickle.**

The make-up of the sting will explain why. The bee sting is about 300 times sharper than a well-made needle. It is like a hollow, barbed tube, attached to a poison sac.

When the barb pierces your skin, the sac immediately pumps its poison down the sting and continues to do so until it is empty. So the sooner you get the sting out the less poison passes into your body.

If you squeeze the sting, you force all the poison out of the sac and give yourself a full dose.

The bee dies after it stings you because the barbs of the sting prevent it from withdrawing it from your skin.

A small percentage of people are allergic to bee stings, which can actually kill them. The Commonwealth Serum Laboratories will immunise against bee stings.

Beekeepers are said to become immune to the effects of bee stings and suffer much less pain than others if stung.

They become adept at removing stings before they have entered the skin far enough to cause pain. They also know by experience how to avoid getting the bees excited enough to attack.

Don't rub the skin if you are stung. This just distributes the poison and may cause more pain and swelling. Leave it alone or dab on ammonia (but not near the eyes).

Bees in the Antipodes

During the last two seasons, which coincided with a world shortage of honey, Australia has stepped up its honey exports.

We consume about two-thirds of our total production, which this year will be adversely affected by widespread drought.

However, prospects look good for apiarists, both on the domestic scene and abroad, with higher sales likely to Japan and a new market expected to open up in China.

A pointer to the future was the consignment in May, 1972 of 17½ tons of honey in a single bulk container to Britain by Capilano Apiaries of Darra, Queensland.

The higher prices for honey have caused one spinoff that beekeepers don't find funny — an upsurge in the stealing of hives, reported from NSW, WA and Queensland.

Some other threats to the industry come from the blind expansion of the use of chemicals in agriculture. Lindane, malthion, DDT, carbolic acid and benzaldehyde are highly toxic to bees and these chemicals have recently shown up in beeswax.

Carbon monoxide from car exhausts has been blamed for poor yields of honey in the Adelaide Hills.

In Tasmania, the growing woodchip industry has already affected the nectar flow from leatherwood, the island state's famous honey, worked by H. L. Jones and Son, of Sheffield since 1940.

The "Save the Redgums" campaign, centred on Wyong, NSW, may well save the lives of millions of bees also.

EARTH GARDEN'S message is again that we must maintain the natural balance of all living things. We must abandon the use of chemical sprays and artificial fertilizers. We must preserve our forests and plant trees wherever we can.

Australia's aboriginals gathered honey from the small wild native bees, which built their nests of rounded wax cells in hollow tree trunks. Bees and honey were totems for many tribes.

Yarrumpa, the honey ants, provided the honey for the aboriginals of central Australia. They bit off the honey-laden stomachs of the live ants.

The modern honey bee was as much a colonist in Australia as the first European settlers, who brought with them their alien domestic cattle, horses, sheep, goats, dogs and cats.

Recently discovered evidence suggests that the first honey bees were brought to Australia in 1810 by the Reverend Samuel Marsden, who that year wrote to a friend in London called Mr Stokes:

"I also took out two hives of bees from Rio and got them out safe but am afraid that many of them are dead since."

The Hobart Town Gazette of April 7, 1821, reported the arrival of the first bees from England. They were brought by Mr William Kermode in the ship "Mary", from Liverpool, and presented to Lieutenant Governor William Sorell.

In Sydney the first arrival of European bees on the ship "Isabella" was advertised in the Government Gazette of June 21, 1822:

"Hive of bees for sale by Mr Parr. Bees imported by Captain Wallis (or Willis)."

Albert Gale, the white-bearded, bowler-hatted apiarist of NSW, relates in his book, Australian Bee Lore and Bee Culture (1912), how a settler at Jervis Bay engaged two aboriginals to carry two hives of black English bees on their heads 40 miles to his homestead.

The early Australian bushmen, said Mr Gale, did not appreciate the truth of the saying "no queen, no honey".

They robbed hives and colonies they kept in hollow logs stoppered with stringy-bark nailed over the edges. They also used gin cases, tea chests and boxes as makeshift hives.

Italian bees, Apis Ligustica, were introduced in the 1860s and later. About the same time bell glasses were replacing straw skeps, which were later outmoded by the Langstroth "Simplicity" frame hives.

An early apiary was set up at the Hawkesbury Agricultural College near Sydney, still a centre of valuable practical beekeeping research.

In the 1930s Tarlton Rayment, a scholar and writer who "spoke to the bees" began his studies of the Australian native bees, ably combining science, literature and art.

To judge by his book, "A Cluster of Bees", published by The Endeavour Press, Sydney, in 1935, the bees also spoke to Tarlton Rayment. He spoke about them in his regular talks on ABC radio.

With Noel Monkhouse he helped produce "The Cliff Dwellers", the first film on the Australian native bee. The bees used for the subjects of the film were the ti-tree pollinators which tunnelled into the cliffs near Mr Rayment's home at Sandringham on Port Phillip Bay. They died in the heat of the cameras.

Tarlton Rayment also wrote Money in Bees in Australia, (1916), and Golden City of the Bees — a school reader, (1921).

pollen

Without honey bees to pollinate plants the world would starve, or be forced to find another efficient large-scale method of pollination.

The wind is the greatest pollinator, but butterflies, wasps, birds and the lower orders of bees are far inferior to the honey bee as pollinators of agricultural crops.

It has been estimated that 100,000 species of plants would disappear without bees to pollinate their blossoms.

Worker bees carry pollen, the fertilizing agent, from the males to the females of some flower species. The female flowers reproduce fruit and seeds. Bees also pollinate flowers which have both male and female parts.

Buckwheat, camellias, sunflowers, melons, pumpkins, cucumbers, apples, pears, cherries, and other cultivated plants bear no fruit if no pollinating insects visit them.

Honey bees are especially attracted to thyme, catnip, lemon balm, pot marjoram, hyssop, summer savoury and mint.

They like flowering hedges and borage and coriander when they are in bloom.

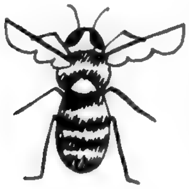
A colony of bees which have swarmed will stay inside a new hive which has been rubbed inside with a generous handful of lemon balm.

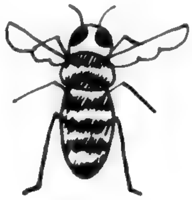
Bee Books

The story of the bees has been told by poets like Virgil and the Belgian Maurice de Maeterlinck, by scientists like Francois Huber and Karl von Frisch and by practical beekeepers like the Rev. Lorenzo Langstroth and A. I. Root.

These tiny insects have so fascinated man that some 20,000 books have been written about them. Go to the books to learn about bees. You will find scores in any public library.

Go to the experienced beekeeper also, because he has the practical knowledge that even the most fascinating book cannot transmit.





These books are among the most interesting:

The Hive and Honey Bee, L. L. Langstroth, Kegan Paul, London, 1852, revised 1888, 521 pp and index.

Here's what the famous apiarist and bee writer A. I. Root had to say about this book in his 1878 preface to his own The ABC and XYZ of Bee Culture.

"What a gold mine that book seemed to me as I looked it over on my journey home! Never was romance so enticing — no, not even Robinson Crusoe; and, best of all, right in my own home I could live out and verify all the wonderful things told therein."

There couldn't be a better tribute. A. I. Root started his own beekeeping career with a queen bee he bought from Langstroth for $20.00.

La Vie Des Abeilles (Life of the Bees), Maurice de Maeterlinck, first English translation, George Allen, London, 1901, 356 pp.

Maeterlinck was a poet, dramatist and mystic. While writing this book he stood a saucer of honey on a table for the local bees to feast upon. "From the beginning," he says, "this strange little creature, that lived in a society under complicated laws, and executed prodigous labours in the darkness, attracted the notice of man."

Maeterlinck combines essential accuracy with beauty of expression, bringing together the arts of science and literature.

Nine Lectures on Bees, Rudolf Steiner, Given to Workmen at the Gotheanum, Domach, Switzerland, 1923. Translated from German, Free Deed Books, Blauvelt, New York, 1964, 91 pp and illustrations.

In this field, as in every other he tackled, Dr. Steiner took a completely unique and different approach — one not conceived by others. "Influences coming from the whole surrounding universe ... work with immense power in the beehive," says Steiner.

He noticed that the 21 days which the worker bee takes to mature correspond to the period of time the sun takes to revolve on its axis and claimed the beehive is "pervaded by love".

The Australasian Bee Keeper, Guide Book for Amateurs, Charles Dickin, Adelaide, 1887.

Essentially an Agricultural Department pamphlet, with only 38 pages. Intriguing to see how little has changed in beekeeping methods.

The Honey-Bee, its Natural History, Physiology and Management, Edward Bevan M.D., London, 1838, 447 pp.

Bevan was a Welshman and dedicates his work to Queen Victoria, who had recently ascended the British throne. A classic of its time.

Australian Bee Lore and Bee Culture, Albert Gale, Wm. Brooks & Co. Ltd., 1912, 313 pp.

Mr. Gale, who wrote regularly for the New South Wales Agricultural Gazette, tells the story of beekeeping in Australia.

A very good book, with some humorous woodcuts, such as the typical bushman, carrying a net and advancing on a swarm of bees in a tree, which has the caption: "Advance Australia Fair".

Mr. Gale suggests the outskirts of country towns as the ideal place to keep bees and the bush house as an excellent apiary, protecting hives from the sun.

Practical Bee-Keeping, being Plain instruction to the amateur for the successful management of the honey bee, Frank Cheshire, 1878, 117 pp.

Is to bees what "The Book of the Goat" is to goats. A beautiful chapter on straw hives, flat and domed skeps and how to make them.

The Golden Throng, a book about bees, Edwin Way Teale, Dodd, Mead & Co. New York, 1940, 208 pp, 85 photographs.

Apart from being a dedicated amateur beekeeper and researcher, Teale was an excellent photographer and kept an observation hive in the living room of his house.

He was so keen that he went to the extent of using his own thumb as the "subject" for the first recorded close-up of a bee sting being injected.

Bees, I. Khalifman, A book on the biology of the bee-colony and the achievement of bee-sciences, Foreign Languages Publishing House, Moscow, 1953, 366 pp.

Khalifman's work won him the Stalin Prize in 1951 and he never fails to include a quote from the late dictator to illustrate a point of bee life. Otherwise a very good book, with a really complete account of the life of bees.

Honey and Your Health, a nutrimental, medicinal & historical commentary, by B. F. Beck, M.D., Museum Press Limited., London, 1947, 231 pp.

Dr. Bodog Beck's book, first published in 1938 in the United States under the title Honey and Health, has been revised and updated for British readers by Doree Smedley.

Still the standard work on honey and contains a thorough study of honey, from ancient superstitions to modern science and nutrition, taking in along the way honey recipes, medical and surgical uses, wild honey yarns, mythology, tradition, customs, poetry and literature.

The chapter "Beekeeping for Profit and Fun" is an added bonus to all this and as good an introduction to practical beekeeping as any.

SOURCES

To start at beekeeping you'll need firstly, information and secondly some essential items of equipment. Bees help too!

Here are the basic sources known to us as EG4 goes to press:

DEPARTMENT OF AGRICULTURE: Free literature is available from the Department in each State. For example: **Beekeeping Information,** an 18 page pamphlet listing sources and contacts in Queensland is free from: **Chief Adviser of Apiculture, Dept of Primary Industries, William Street, Brisbane, 4000.**

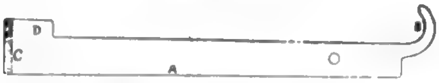
In NSW various leaflets are available free from the Department of Agriculture. Recommended are: **Design and Maintenance of Beehives, F. S. Benecke (Bulletin A88), Feeding Bees, A. A. Clemson (Bulletin A227), and Four Important Bee Diseases, N. A. Cutts (Bulletin A201). Address: State Office Block, Phillip Street, Sydney, 2000.**

PRACTICAL BOOKS: **Bees and Honey, W. A. Goodacre, NSW Department of Agriculture, fourth edition, Sydney, 1966, 200 pp. Price $1.25 (add 24 cents postage).**

All the information a beginner needs to know in fairly simple language. Covers hives and materials, working and management methods, migratory beekeeping, swarming rearing queens, extracting honey, marketing, producing section comb honey, bees-wax, pollen substitutes, solar wax extractor, diseases, pests and enemies, wintering, valuable trees and plants. Very useful, with numerous, clear photos and illustrations.

Beekeeping in Victoria, Victorian Department of Agriculture, Treasury Place, Melbourne, 3000. A similar book to Bees and Honey, but currently out of print. Perhaps it will be reprinted if enough people write to the Department.

HIVE TOOL

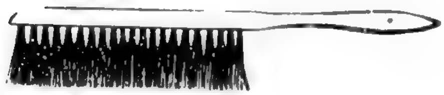


A NECESSITY IN APIARY WORK

The side will scrape a large surface such as a floorboard. The end (c) can be used to scrape narrow places, clean top bars, cut burr combs or pryse two bodies apart. The offset (d), placed horizontally between two frames, levers them apart; and the hook (b) slipped under a frame lifts any frame out of a hive.

In best quality steel; Weight 8 ozs.

BEE BRUSH



HIVE TOOL and BEE BRUSH from Pender Bros catalogue.

The ABC and XYC of Bee Culture, A. I. Root. Revised by E. R. Root, assisted by H. H. Root, etc, published by the A. I. Root Co, Medina, Ohio, USA. 712 pp and index.

Price $8.40 posted, from Pender Bros Pty Ltd, PO Box 20, Maitland, NSW, 2320, or apiarists' suppliers.

Just what it says it is: "An encyclopedia pertaining to scientific and practical culture of bees". All the information you are ever likely to need after you learn the basics of beekeeping. First published in 1877, now in its 32nd revised edition.

A. R. Root, the American "bee evangelist", preached the doctrine of modern, efficient, beekeeping and helped to improve and standardise equipment. He was the first to send bees by mail.

Entries are treated in alphabetical order. Profusely illustrated with drawings and photographs. Worth the money.

* *

JOURNALS: **The Australasian Beekeeper (ABK), monthly, $4.20 a year from: The Manager, Australasian Beekeeper, Box 20, PO Maitland, NSW, 2320. Sample copy free.**

The ABK started in 1899, the same year as its current editor, Mr Morris W. Morgan, whose father and grandfather were apiarists.

Basically it is the trade voice of various commercial apiarists' groups, but it contains regular features for beginners, an on-going detailed history of beekeeping in Australia, book reviews and valuable sources of equipment and queen bee suppliers through its advertisements.

Extract from "Buzzing up and down the Nile", a story in the October, 1972 issue: "The worst of all the enemies of the bees and the beekeepers is the cotton crop spray. It is understood that this contains a large percentage of DDT and according to the Egyptian national newspapers, it accounted for the loss of no less than 60 per cent of the total bee population last year".

Australian Bee Journal, issued by the Victorian Apiarists' Association, monthly, $4.80 a year from: Mr P. Titcomb, PO Box 313, Wangaratta, Victoria, 3677. Sample copy free.

Similar to the ABK but currently smaller. A good amateur section. The sources for Victoria. Extract from the amateur section of the November, 1972 issue: "Another topic discussed at our October meeting was again the subject of chemical spraying. Spraying is unnatural to nature, and although it is considered necessary in farming, there is an outcry against it all over the world. To control the spraying of chemicals, strong legislation is urgently required".

EQUIPMENT: To start you'll need a veil, hive tool, smoker, bee brush and the basic hive: eight or ten frame super, frames, frame wire, wax foundation, lid, bottom board, queen excluder, nails for assembly. Gloves are not necessary.

CATALOGUES: The big suppliers are Pender Bros and Guilfoyles and their agents. Illustrated catalogues are free, but we suggest you send a 7 cent stamp. The addresses of local agents are listed.

Pender Bros Pty Ltd, PO Box 20, Maitland, NSW, 2320.
John L. Guilfoyle & Co, PO Box 18, Darra, Qld, 4076.

APIARY SUPPLIES: Redpath's Beeline Apiaries, 285 Waverley Road, East Malvern, Victoria, 3145. Supplier of all beekeeping equipment, queens, nucleus hives, package bees, complete hives, honey, bees-wax bought and sold.

Commercial Apiarists' Association, 88 South Street, Granville, NSW, 2142. All supplies.

JJP Bee Goods, 43 Moira Street, Sutherland, NSW, 2232. Frames, boxes, rims, comb foundation.

The Producers Co-Operative Distributing Society Ltd, 539 Flinders Lane, Melbourne, Victoria, 3000. Penders agents.

Barry McCahon, Jubilee Lake Road, Daylesford, Victoria, 3460. Frames, etc.

Ron Harvey, 505 Armstrong Street, North Ballarat, Victoria, 3350.

BEES: A nucleus, is a small colony, with three or four combs of store and brood with a young queen and workers. Some suppliers of queens and nuclei:

Milton Apiaries, 39 Benjamin Street, Bexley North, NSW, 2207.

Norman V. Rice, PO Box 95, Beaudesert, Queensland, 4285.

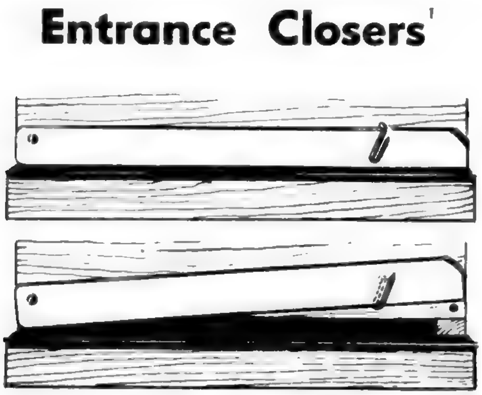
Macleay Valley Apiaries, Crescent Head Road, Kempsey, NSW, 2440.

Gear Queens, RMB 405, Jilliby Road, Wyong, NSW, 2259.

Gretchen Wheen, 155 Grandview Drive, Avalon, NSW, 2107.

Ulrick's Apiaries, 390 Hellawell Road, Sunnybank, Queensland, 4109.

A. G. Langridge, 104 Winstanley Street, Carina Heights, Queensland, 4152.



HIVE ENTRANCES — from Guilfoyle's catalogue.

REGISTRATION of beehives is compulsory. Enquire at the Department of Agriculture in your State. As a guideline, in Victoria $1 annually will cover 1 to 25 hives. Bees are also governed by local shire and council by-laws. Check at the shire hall.

STRAW SKEPS: Are picturesque, but now illegal. This is because an inspector must be able to pull out frames to check for diseases like American foul brood.

LEAFLETS: The Australian Honey Board has produced several leaflets dealing with bees and honey. Send a 7 cents stamp to the branch in your State for information.

The Amateur Beekeepers' Association of New South Wales was formed in 1954 by a group of amateur beekeepers who realized that the benefits and pleasures of hobbyist beekeeping would be better obtained with the help and experience of other persons with the same interest.

It has a number of metropolitan and country branches and is growing rapidly.

The Association furthers the teaching and study of the habits, behaviour and handling of bees. It enables enthusiasts to exchange ideas and experiences. By teaching sound methods of apiary management it reduces the incidence of diseases or neglected hives and generally increases the output from the hives.

Members can buy beekeeping goods from stocks held by equipment officers and can borrow honey extracting gear. Regular meetings are held by each branch at which lectures, films, demonstrations and general discussions are given enabling tuition in all branches of modern beekeeping practice by expert apiarists.

If you are a beginner, or an old beekeeper from way-back, you will enjoy discussions with fellow beekeepers, solve personal bee problems and enjoy many other advantages.

Subscriptions are due on January 1 each year and cost $4.00, with an entrance fee of $1.00. Juniors, $2.00 and 50 cents respectively.

A monthly news bulletin detailing activities of the various branches is sent to members.

Visitors are welcome to all our meetings. If you would like to find out more before joining I suggest you contact the nearest branch secretary for meeting dates and places.

Colin Mettam, Hon. General Secretary, The Amateur Beekeepers' Association of N.S.W.

Branch secretaries of The Amateur Beekeepers' Association of N.S.W.:

Metropolitan:

North Shore Mr. R. James, 3 Nulgarra Street, Frenchs Forest 2086.

Illawarra Mr. R. P. Heslehurst, 4 Kungar Road, Caringbah 2229.

Country:

South Coast Mr. T. J. Poole, 11 John Street, Woonoona 2517.

Oak Flats Mr. J. H. Twaddle, 9 Leamington Road, Oak Flats 2527.

Hunter Valley Mr. W. J. Reedman, 20 Tirriki Street, Charlestown 2290.

Macarthur Mr. J. Cook, Lot 2, Junction Road, Kentlyn 2560.

A.C.T. Mr. K. J. Dalgarno, 8 Torres Street, Red Hill 2603.

OTHER AMATEUR GROUPS

N.S.W.: Barrier Beekeepers' Association, Secretary, F. C. Lynott, 44 Long Street, Broken Hill, N.S.W. 2880.

Victoria: Victorian Apiarist Association, Amateur Section, Acting Sec. Mr. W. Koljo, 21 Penrose Street, Box Hill South, Victoria 3128.

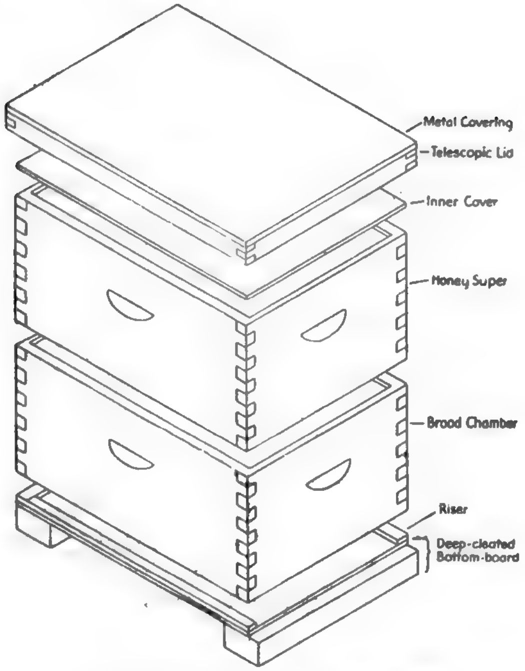
Central Victorian Apiarists' Association, Hon. Sec. Roger F. Rich, 58 Dundas Road, Maryborough, Victoria 3465.

Queensland: Amateur Beekeepers' Society of South-East Queensland, Sec. J. P. Mackenzie, 33 Upland Road, St. Lucia, Qld. 4067.

Capricornia Beekeepers' Club, Secretary, Box 523, Rockhampton, Qld. 4700.

South Australia: Amateur Beekeepers' Society of South Australia Inc., Hon. Sec. Mrs. Gwen Haensel, Box 41A, G.P.O. Adelaide, S.A. 5001.

Lift the Lid



Component parts of a typical hive

by Carol & Jeff Williams

For honey addicts like us, and those on the road to self-sufficiency, the present world shortage of honey and the resulting high prices make keeping bees an essential part of our life on the land.

If you are contemplating getting your own bees perhaps our experiences as novices will be a help to you.

Where to get a hive? We first sought help from nearby professional beekeepers, but they were short of bees themselves and could not offer suggestions, nor had they bees for sale.

On impulse we wrote to the Tasmanian Department of Agriculture and received a pleasant surprise. Not only did the Department's apiarist discover a farmer wishing to sell two hives, but he drove 20 miles to the farm and inspected them to ensure they were disease-free.

We bought them for $12 each and placed them in a well-sheltered position near fresh water and settled back to read the booklet on bees supplied by the Agriculture Department.

Our first crisis occurred a week later on a warm spring day. What were 10,000 bees doing clustered around the hive?

It was the "swarming season" and we panicked for fear of losing half of our bees. A phone call to the guardian angel of bees at the Ag Dept allayed our fears.

The bees are hot and overcrowded, he explained, and need more ventilation and room. We placed another store-bought super on top of each of the existing hives and breathed a sigh of relief.

We started to seriously study the bees and found The ABC and XYC of Bee Culture, by A. I. Root, a valuable guide.

At this stage we had to buy a few essential articles, a smoke gun, gloves and two veils. With this protection we could open the hives. Fortunately we had unknowingly acquired two races of quiet bees — the Caucasian and the Italian.

We discovered that beekeeping is not a matter of sitting back and letting the bees do the work. Good beekeeping involves opening the hives and inspecting the frames at least once every two weeks during the spring breeding season. It is at those moments we appreciated our quiet-tempered bees.

This attention is necessary as bees naturally tend to swarm. If a new queen is born during the spring, the old queen will leave the hive with a number of workers to set up a new colony. This swarming is in response to overcrowding and reduces the number of workers in the hive and thus the amount of honey gathered.

Therefore the queen cells formed in the spring must be removed every two weeks and steps taken to prevent overcrowding.

At last the summer honey flow is here, and for the small fee of three stings between us we have harvested so far two frames of delicious white honey, each holding about two pounds.

As each hive contains about 16 frames available for honey storage we are hoping for much more. As we have no extractor we scrape the wax and honey from the frame, crush it together and place it in a muslin bag over a bowl in a warm place.

The wax and small amount of honey remaining in the bag can be fed to the bees during the winter.

This year's honey crop in Tasmania is reduced by 80 per cent by official estimates because of the drought. Even so, we have had enough honey of such good quality to encourage us to expand our small apiary next year.

There is a complex and fascinating world waiting in each hive if you are only brave enough to lift the lid.

Working with Bees

by Maarten Ringenoldus

Honey is the food of the bees and, while nectar-producing flowers are available, they will gather nectar to make honey until they have no more room to store it.

Then they may swarm. The bee colony divides, the queen and a "swarm" of bees will leave the hive. Would that, then, leave the hive without a queen to lay eggs and so maintain the hive strength?

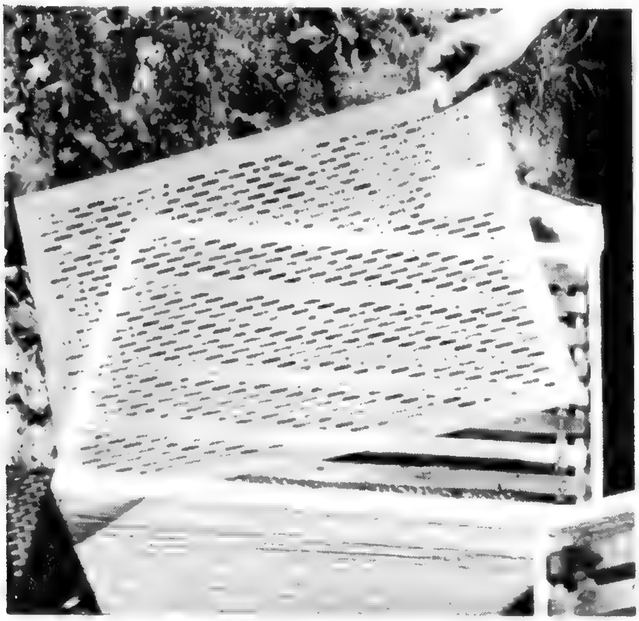
Before the "swarm" leaves, queen cells are started, so that within a week or so a few new queens will be ready to emerge. The swarming bees gorge themselves with honey to enable them to fly about looking for a new place to establish their colony. The honey gorged may last them for about 6 to 10 days and in the first 3 to 5 days the swarm is docile and can be approached with relative safety.

When the worker bees find a likely place, and the queen approves, the colony is established, sometimes in a hollow tree, under a roof, in a chimney or, if a beekeeper has caught the swarm, in a new beehive.

Swarms are usually angry if they are attacked, stones and other objects thrown by curious or frightened people entering the bundle of bees and disturbing the queen, which the workers are obliged to protect. They may also be getting short of food and be more inclined to be hostile if they have not yet found a new home.

If you find bees particularly flying around you (not just going past) when near a swarm or beehive you are well advised to retreat unless you are prepared to handle them.

A quick way to start a hive is with a swarm. Have the box, frames, etc, ready and when you hear of a swarm, shake and brush the bees (often found on a tree branch) into the box. Take the box (closed) to your hive site where it can then be opened.



CLOSE-UP of QUEEN EXCLUDER.

Amateur beekeepers in this area have started many hives this way, even advertising a reward for the capture of a swarm.

Most beehives are composed of a standard-sized box in which hang 9 or 10 frames into which the bees build the wax comb.

This is used:

(a) by the queen to deposit eggs which hatch into grubs which are fed, grow and then pupate in the same cell of the comb, eat their way out and then start their adult lives;

(b) for storage of honey; and

(c) storage of "bee bread" — a pollen and honey mixture used to feed bee grubs.

Usually more than one box is used for each hive, the lowest box being used as a brood chamber.

The queen is prevented from leaving the lower box by covering it with a slotted zinc, plastic sheet or wire grid. This "queen excluder" is made with spaces exactly sufficient to allow passage of the workers, but (because of her relatively large size) not the queen.

The box, or boxes (known as "supers") added above the brood chamber are then used for honey storage only and it is from these that the beekeeper removes the frames and extracts the honey.

When honey is "ripe" or mature, each cell is covered with a wax cap, and the first step in extraction is to skim the cell cappings off with a sharp (preferably heated) knife. Then the frame is spun in a centrifugal extractor to throw the honey out on to the inside of the extractor drum.

Honey collects at the bottom and is let out through a valve or hole of some sort. The frames are then replaced in the box and the box replaced on the hive. Bees clean the remaining honey from the comb, repair damaged sections with new wax and commence to use the combs again when nectar is available again to make honey.

You may have sipped nectar from flowers such as honeysuckle. It tastes sweet, but not really like honey.

The worker gathers nectar (and in flight removes some of the moisture), then deposits it in a cell in the hive. Meanwhile, other workers are responsible for ventilation of the hive, which aids in further concentrating the nectar into honey by removing moisture and at the same time the brood area is maintained at a relatively constant temperature.

If it is dry, hot weather the bees will bring in drops of water which are attached to the hive walls or roof so that it will evaporate and assist in cooling the hive.

It has been found by experiment with strips of paper held near the hive entrance (a horizontal slot about 15 x ⅜in) that in some places the air is going in while in others it is coming out — seems that bees are the original air-conditioning experts.

Pollen is required to make bee bread and it is interesting to watch bees landing at the hive entrance, observing the variety (at times) of the colours of pollen brought in on lumps on their legs. I have seen different shades of yellow, red and grey. Some plants, such as sweet corn, do not require bees for pollination, but bees will go to them to collect pollen.

It seems that the flowering plants which require bee, ant or wasp pollination usually have nectar, but not always, much to the anguish of the beekeeper who has travelled long distances with a semi-trailer of beehives to a likely area only to find that it is a dry year, or too wet.

That reminds me to mention that a box or super, when full, can hold about 60lb of honey and that a commercial apiarist (who moves his hives to the flowering trees, grasses, legumes, bushes, etc, as the case may be) has been known to produce about 2,000lb of honey in one year. Do you think you work hard? No, I don't know how many bees were in the hive!

Many factors govern the amount of honey produced by a hive. Ants and the wax moth can interfere with hive efficiency as can the birds, toads (and reputedly ducks) which will eat bees, as can the fertility and breeding background of the queen. Some beekeepers obtain replacement queens for their hives at regular intervals.

When flowers are close by, less of the nectar collected needs to be used as "fuel" for flight so that more can be stored, hence a beekeeper may find it worthwhile to move his bees to the flowers. Strong winds, hot or cold weather will make the bees less efficient or make them concentrate on cooling or heating the hive.

In dry areas it is invaluable to have a source of water handy for the bees.

Our consumption of honey varies a lot, but if you look after your hive you can be guaranteed a minimum of 60 to 100lb of honey in an average year. When robbing the hive of honey, hold the frames up to the light. Sometimes different coloured honeys can be seen in the same frame. This shows that the bees changed from one type of flower to another when they were filling that frame.

If you are interested in bees, first-hand knowledge and a good reference book are invaluable (see booklists). Look out for beehives, find out who owns them and you will start to meet some friendly people (those who keep bees usually have some time for others). Often there are bee associations (with a very nominal membership fee) in your area. Read some material first, get some idea of what it's all about and then you are prepared to ask questions.

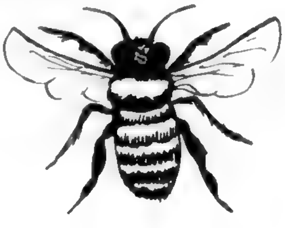
In Queensland there is usually a "Beekeepers' School" in August each year. It lasts about a week and is attended by people of all ages and available (recommended) for a very moderate fee. Inquire at Department of Primary Industry, Brisbane.

Local knowledge should be obtained before obtaining material for boxes, frames, etc, as there may be someone who makes these goods, or a local beekeeper could give ideas of types of timber and offcuts that could be used if you have tools. But, unless you are very keen, it is not recommended that you make frames. Buy them.

Often, especially in smaller towns and on farms, there are old beehives which are no longer particularly wanted or used and may be available for a low price or the taking. Advertise for a hive — only a few lines, but a quick way to find out if there is one about and unwanted.

Wax cappings and damaged combs can be melted down, cleaned of honey and debris, and used to make candles, or sold in little blocks to shops, tailors (for their threads?), carpenters and so on.

It's 2 am. My candles are now burnt to the tablecloth and are surrounded by ants carrying insects. Cheerio, peace and love.



a family bin

by Christopher Beck

For city folks who live in homes with small gardens or in flats, composting by traditional means can be a drag — if not impossible.

In the past, composting has meant a pit with wooden sides which usually end up rotting. Then there are smells, flies and, for those of you with curious kids, a hygiene and safety problem.

Now Laurence Gedye of Melbourne is producing an ideal suburban composter. It looks pretty much like an up-ended plastic rubbish bin with the lid at the wrong end.

A New Zealand invention (why are Kiwis always in the forefront of composting?), it is made of 3/32 inch green or black fibreglass moulded in one piece. It is lightweight, portable and acid and rot-resistant. It is impervious to the heat, and concentrated bacteria produced during the conversion of waste to compost.

The Gedye-Firth Fibreglass Compost Bin, as it is known, is a useful household "tool" and anti-pollution device. Its inverted bucket design, which is open at the widest, flanged end which is placed on the ground, prevents seepage of liquids and odours. The lid, which fits tightly so that it is difficult for young children to remove, also prevents smells and stops flies from breeding.

The bin comes in two sizes, seven cu ft, and 16 cu ft. The small bin will hold 150 cu ft of organic waste which it will turn into compost in the time that it takes the average family — two adults and, as the statisticians tell us, 2.8 children — to accumulate that amount. The 16 cu ft model transforms 350 cu ft of unrotted matter into rich humus.

You can put anything organic into the bins — fruit, vegetable peelings, food scraps, bones, grass clippings, natural fibre rags, tea leaves, coffee grounds, leaves, grass clippings, wood ashes and the contents of vacuum cleaners.

This will leave you with plastic, polyfilm (Gladwrap, etc), aluminium foil, glass and tin. Laurence also advises against putting the square pint and quart milk cartons into compost heaps because the cardboard from which they are made is plasticised and does not break down easily.

Disinfectants, coal and carbonette ashes must never be placed in the composter.

Using the bin is easy. We'll let Laurence Gedye tell you how: "With a spade or fork loosen the ground on which you are going to stand the bin so that worms can quickly work their way into the organic refuse. Pack in about eight inches of organic matter. Sprinkle with manure to activate conversion and lime to reduce acidity, then top off with a light layer of soil. Repeat this process as refuse becomes available. Tramp down occasionally. When the compost cake is sufficiently cured, just lift the bin and start another batch. Then dig your compost into the garden."

Perhaps the best testimony for the bins is that about 85% of the people who have bought one have bought a second. The small bin costs $29.50, and the big one $39.50. And it's not hard to believe Laurence when he says: "If every home in Australia had one or two of these bins, there would no longer be any garbage or incineration problem."

Badger Ground

Tom & Ilze are potters. They make plates, pots, mugs and goblets which are exhibited at Sydney's Argyle Art Centre and the Bonython Gallery.

Their Pottery is out in the country at a place called The Badger Ground. Des Howard, of Howard Ceramics, who runs the Argyle pottery shop, has his house and kiln nearby (left and above).

The Badger Ground potters have organic gardens and have adapted to working in the bush. Tom & Ilze use LP gas for firing the kilns and for light. A small generator runs the water pump.

On these pages the pictures tell the story. They are by Peter Russell.

SEEK LIFE'S BEST

Sane Living in a Mad World, A Guide to the Organic Way of Life, Robert Rodale, Rodale Press, Emmaus, Pennsylvania, 1972, 270 pp. Printed on recycled paper.

In this book the dirty words have more than four letters.

They are words like plastic, when applied to describe food, antibiotics, when used on animals, chemicals as sprays or food preservatives, and pesticides, when applied, literally, to the soil.

Since his father's death, Robert Rodale has become the leading spokesman for the organic movement in the United States.

He has explained the practical methods of gardening without sprays and pesticides in his regular newspaper column and in "Organic Gardening and Farming" and the virtues of physical fitness in "Prevention" magazine. This book combines the outlook of both ideas and extends these to a new philosophy based on natural living.

Robert Rodale offers a way out of the rat-race of our machine-made, machine-mad wilderness. He calls it "the organic way of life" and it is his formula for sane living in a world gone mad from the wrong kind of progress.

We must change our values and even, if necessary, scrap the whole system of consumer-oriented living and the hectic pace of "progress" to restore quality to our existence, he says.

We can't smash our way out with technology or sit back and hope for scientific miracles to clean up our water and air and get rid of millions of tons of garbage. It's too late for that now.

Robert Rodale believes, as we do, that man must use only the best aspects of modern science and combine these with natural gardening, conservation, healthy "whole" foods and a productive use of leisure to find our way out of the current crisis.

We must turn away from the concepts of gross national product, possessions for their own sake and question progress until we know what kind of future we really want.

"I mean go backwards," he says at one point. "Let's stop riding and do some walking. Let's peel potatoes again instead of opening a packet of potato powder."

"Technology has taken the fun out of leisure because it has liberated us from the need to share work," he continues. "People used to get together to help each other. I'm not too old to remember the fun of helping a neighbouring farmer get in his hay before a summer thunderstorm, then being rewarded with a cool drink of lemonade in the kitchen."

The answer lies, at least partly, in a return to the old, enduring values. The suggested idea of poverty by choice, and a new race of voluntary, but enlightened, peasants is one which provokes much thought.

Visiting a university, Robert Rodale was surprised to hear a student who wished for more austere times, like those of the 1930s Depression. He asked the boy why.

"Well, we have lived only in affluent times," the student replied. "Many young people want to test themselves, to see if they could measure up to the kind of hard living their parents experienced in the Depression, and it doesn't sound all bad to us."

This leads the author to speculate that the commune-dwellers and back-to-the-earthers of today are seeking to recreate a modern, though educated version of peasant life.

"Peasantry has a bad connotation because the old-time peasant couldn't read or write, and suffered from many ills that only a small amount of extra knowledge would have prevented.

"Looking back from the vantage point of a high-rise potential slum in a polluted city, peasantry looks to today's youth like a good alternative, especially since the stigma of being dumb peasants can be avoided," he says.

GARDENING: From "Sane Living in a Mad World".

Organic living consists in finding ways to live that won't consume more than their fair share of resources or place unfair burdens on other people.

"There are other aspects of sane living in this book," Robert Rodale says in the preface, "but they're all variants of gardening, better eating and physical improvement. You'll learn how these seemingly varied ideas relate to show you a way out of the frustrations of life in a modern, overdeveloped society."

Naturally, Robert Rodale has some interesting things to say about gardeners, who he says, can be described facetiously as "someone who looks at a seed and sees a plant", and gardening itself.

"Gardening, perhaps, offers more opportunities to put meaning and productivity into our lives than any other leisure activity. Working with the soil and helping it produce satisfies the human urge to keep in contact with the foundation of life, because it is the earth under our feet that, more than anything, influences how we live.

"Gardening returns to us what we put into it. If our goals are limited, our returns are small." We'll go along with that, Bob.

For almost 30 years the Organic Gardening Experimental Farm at Emmaus has produced healthy fruit and vegetables, matching the average production in the area, without using chemical fertilizers and sprays. It can be done!

There are many more topics covered in this book than those we have chosen to emphasize. It's the kind of book which can answer the question: "What can I do?" Here are the ways to make at least a start on righting the wrongs with which we have burdened Planet Earth.

A good quarter of Sane Living is concerned with food and the inner pollution caused by food additives, preservatives, over-refining, artificial flavouring and machine handling.

Here are documented the evils of white sugar, white flour, highly sweetened desserts like ice cream and factory-baked cakes. As elsewhere the message is: Seek life's best and the target: wholeness.

Robert Rodale is no pessimist. He thinks sane living is possible. "If enough people start living sanely, they may gain the courage and the desire to create that world that is itself sane".

Here's hoping.

the transition

By ROBERT RODALE

Pollution, crime, crowding, and job lay-offs are making some city people look longingly at life in the country. In the United States, big migration of farm people to the city has not yet stopped, but is being offset by a new back-to-the-land trend.

Even apartment-dwellers in large cities have a renewed interest in the land. They are sprouting seeds indoors, tending rooftop gardens, and looking for natural products to buy.

Hiking, camping and backpacking are now "in" activities. Short trips to wild areas help people recharge their batteries, and give reassurance that natural ways of life are still possible.

Some daring people have forsaken city life entirely and become farmers. Their numbers are few, and the risks of farming are many. But the idea of escaping pollution and other city-type worries is so appealing that going back to the land remains attractive to many.

If the rural-living bug has bitten you, here are some ideas for coping with your new passion:

1. Be a gardener. Start gradually, perhaps with some indoor plants. Consider the possibilities of window boxes, which at least get your fingers in the earth. Then get serious about growing part of your family's food in a vegetable garden.

Many essential farm chores can be mastered first in a garden. Find out how to test soil and what kinds of fertilisers are most economical. Learn to identify insect pests and practise some biological control.

Keeping chickens, ducks, or other small livestock, is often possible on a small garden-type homestead. Only after you master gardening are you ready to advance to farming.

2. Spend some vacations on farms. Many farm families open their homes to holidaying city people to make extra income. Living with a farmer for a week or two will give you a first-hand look at what modern country life is like.

Also check the possibility of renting land for gardening near where you live.

3. Consider a partial transition to farming. The happiest back-to-the-land people tend to live near cities, where they can find part-time work. The coming trend to four day weeks and shorter working hours will favour farming as an avocation.

Nearness to a city or town also means markets for farm produce are close. Best opportunities for part-timers are in speciality farming, like vegetable or fruit growing. To succeed economically, you will need to sell directly to stores or even to the public.

Putting farm produce into standard distribution channels puts you into direct competition with massive agribusiness operations. Prices offered are usually too low to assure a profit.

4. When you start looking for a farm, give most weight to good soil and growing conditions. Scenic hill farms often have poor soil, caused by severe erosion. Level land may not be as pretty, but is more fertile.

Get help from someone who knows local conditions when looking for a farm. An experienced farmer can tip you off to problems or opportunities you might ignore.

Check carefully into plans for future highways, dams, and housing developments which might change the rural character of the neighbourhood. And don't be afraid to knock on doors and ask "Is this farm for sale?" Often country people are willing to sell, but haven't listed their farms with an agent or put out a sign.

5. If you're young and want to go back to natural living in a country setting, don't expect to move in on a commune. Most are overcrowded and aren't looking for new members.

First, get some experience by working for a farmer, or by gardening on a large scale. Then try to get together enough money to make a down payment on your own farm. Get some friends to go in with you if you want to. Set your rules and see that they're followed.

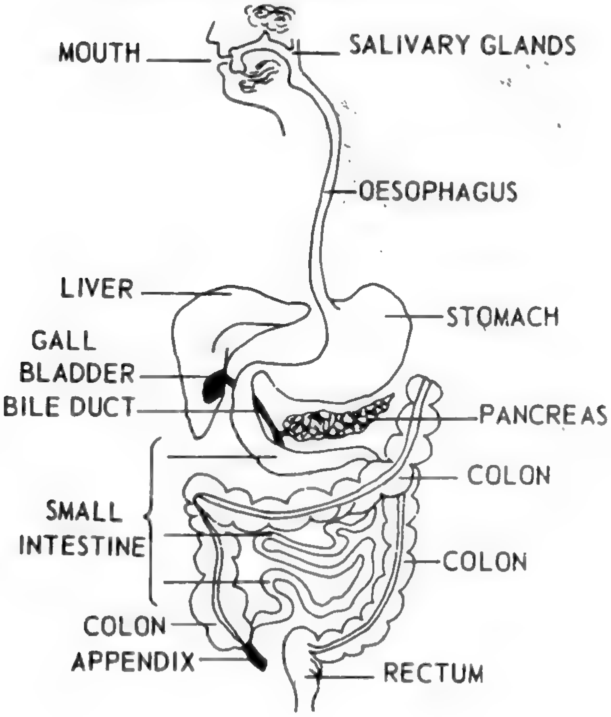
If you're serious about farming and living on the land, look for opportunity, not glamour. Prepare yourself by study and practice sessions in farm living.

Going back to the land today takes courage, knowledge, dedication and money. Few people living in cities have all the qualifications to be farmers, but almost everyone can at least make a move in the direction of more natural living.

And when you do finally get your ideal piece of land that you can call your own, be sure to farm it using ecological, organic principles. There's no point going back to the land if you have to rip it off to survive. Organiculture is the only way to prevent that.

Enzymes & your food

GASTROINTESTINAL TRACT



The food we eat must be broken down into small soluble particles before it can "feed" the cells of our bodies. This process of digestion is controlled by enzymes, each of which works specifically on a particular substance.

Food consists mainly of protein, fats, and carbohydrate (starch and sugars). These are converted to amino acids, fatty acids and glycerol, and glucose which are absorbed into the bloodstream and carried to wherever they are needed.

Water, salts and vitamins are absorbed unchanged at various points "along the way".

The digestive tract is basically a tube, open at both ends. Digestion begins in the mouth. When your mouth "waters" at the anticipation of a good meal, saliva is being produced.

Chewing breaks up the food and mixes it with saliva, which contains the enzyme PTYALIN. This starts the chemical breakdowm of starch to maltose, a type of sugar.

Food is then swallowed. This ends the voluntary part of digestion. After that, chewed-up matter travels down the oesophagus (a vertical tube) to the stomach. The food is pushed along the oesophagus by waves of muscular contractions.

Digestive juices containing enzymes and hydrochloric acid are secreted in the stomach. This is a more-or-less continual process and the feeling of hunger occurs when these juices are present and there is nothing for them to work on.

Stomach juices contain the enzyme PEPSIN, which begins the transformation of protein into intermediate substances called PEPTONES. Hydrochloric acid, also present, coagulates milk.

Food stays in the stomach for two to four hours. Liquids pass through more quickly. Fats in the food stay in the stomach longer and so satisfy the appetite longer.

The semi-liquid food passes into the long, coiled small intestine (about 20 feet long and an inch in diameter). This is where most digestion is completed and most absorption takes place.

Enzyme-carrying juices produced in the pancreas and the liver enter the beginning of the small intestine. The walls of the small intestine also produce enzymes. It is this combination which completes the digestive processes.

Protein and peptones are acted upon by TRYPSIN and CHYMOTRYPSIN to form amino acids. Fats are converted mainly by LIPASE to fatty acids and glycerol.

Maltose and other sugars are converted to simple sugars, mainly glucose, by a further series of enzymes.

These end products are absorbed into the bloodstream and the lymph system. Glucose and amino acids are taken to the liver via the bloodstream. The amino acids are used for growth, building and repair of body tissues. Glucose is the energy fuel of our bodies.

Some fatty acids travel through the lymph vessels and are stored in fat deposits. These serve as heat regulators, body insulators and further fuel reserves. Fat also fills the spaces between the body organs and nerves, keeping everythin in place.

Liver wastes are excreted in the urine.

From the small intestine, the remaining undigested matter, mainly cellulose roughage, passes into the large intestine or colon (about five feet long and two inches in diameter). Here it is temporarily stored while water is absorbed, and then expelled as faeces.

The waste products of food leave the body about 24 hours after the food was eaten.

Bio-dynamics & fruit trees

Some tips on Bio-dynamic methods used in orchards in Holland were given to members of the Healthy Soil Society (Cairns) recently by Mr John von Nordheim.

Mr von Nordheim, who comes from Holland, attended a Bio-dynamic Farming College there based on the principles of Dr Rudolf Steiner, the founder of Anthroposophy.

Bio-dynamics (from the Greek bios, life, and dynamos, energy) is a scientific approach to organic gardening, which employs crop rotation, starters and sprays, compost and moon planting.

Mr von Nordheim told the meeting, held at the property of Mr and Mrs Eric Mansbridge, near Atherton, Queensland that Dutch farmers grow bands of bush between each paddock. Here flowerpots filled with peatmoss are turned upside down to act as insect incubators and brooders in the harsh weather.

It has been found that certain insects are necessary, he said.

Fruit trees, especially apples, have their trunks painted with a mixture of equal parts of clay, cow manure and sand mixed with water. A little more or less sand is used, depending on the thickness of the clay.

This heals wounds and reduces disease, and the trees gain nourishment through the bark.

The mixture is applied with a scrubbing brush or paint brush when the trees are leafless, just before spring. No gaps are left, but every part thickly covered.

Mr von Nordheim said that in Bio-dynamic orchards troubled with black aphis, nasturtium plants are grown between trees, and an infusion (of nasturtiums) made and used as a spray.

He said farms should have their cattle and all other animals fed with grains grown on the place if possible, for ultimate benefit.

The changeover from ordinary to organic farming is a slow process and usually takes from 12 to 20 years. It is very hard work, as all manures should first be composted.

A compost pit should be worked over every three or four months and is ready in nine months, or in a shorter time on well-established farms. Compost should be spread evenly over the paddocks.

"It is a great pity," said Mr von Nordheim, "that governments generally are not interested enough to spend money to test organic methods."

Bio-dynamic farmers work with the planets, he said, but made the point that this system is far too complicated for the average person, and takes three or four years to learn.

In a discussion following Mr von Nordheim's talk it was said that the Chinese custom of planting above-ground plants with the waxing moon and below-ground plants (such as onions or potatoes) with the waning moon has proven successful.

Mr Harry Kurth, who is the Australian representative for the World Union for the Preservation of Life, said nasturtium leaves should be eaten and that one or two daily will provide vitamins and promote good health.

Mr Mansbridge has wedges of copper driven into every alternate tree in his long groves of citrus trees bordering the driveway to his house.

The copper triangles point directly north and south and are supposed to polarise the trees and prevent diseases. The trees without copper wedges will be used as controls to see how the scheme works.

Source: "Soil & Health", the monthly newsletter of The Healthy Soil Society and The Natural Health Society — Cairns, edited by Mrs Marjorie Spear.

The Healthy Soil Society meets on the third Saturday each month, usually at a farm or garden where plants are produced without chemical sprays or fertilisers. Annual subscription $1.

The Natural Health Society meets in Cairns on the first Sunday in the month. Annual subscription $2.50. For inquiries write to Mrs M. Spear, Box 112, Kuranda, Qld 4870. Telephone Kuranda 205.

Gladney's cider

by Gladney Oakley

The apple cider I made last autumn was widely appreciated. I'd like to pass on the recipe that worked.

Pick/buy apples. Juice in a commercial juicer. Strain juice through cheesecloth or fine sieve. Pour into clean, empty beer/wine bottles. Cap/cork.

Store. Wait one to ten weeks. Chill. Open (cautiously). Strain through cheesecloth again. Serve.

More sophisticated recipes call for the addition of hops and/or sugar. I haven't tried these.

The base problem in making cider is the same problem encountered in making cheese: one wants to encourage in a simple manner, the micro-organisms whose fermentation products are pleasant/aromatic/flavoursome, and discourage the others.

Commercially, this is done by sterilization of the starting material (whether apple juice or milk) and the controlled addition of specific micro-organisms which have been maintained in the laboratory.

Down on the farm this is done by experimentation until one hits upon a combination of natural unsterilized starting material and a routine (your own routine) which has mostly good results.

My routine (which isn't described above. . . what I've put down is as a shadow to the actual routine) didn't work with Jonathons, did work with Granny Smiths.

I made 120 bottles. Four exploded. Another 25 or so had to be opened slowly so that the excess pressure could be released slowly. The remainder were not a problem. None tasted awful. Each one tasted slightly different. A quarter of them tasted better than commercial champagne.

PURPLE PATCH

Plant a patch of purple plants.

A splash of purple in your garden can be productive as well as pretty, yielding some delicious results for the table.

Start "painting" under the soil first with radishes, beetroot and purple-topped swedes. At ground level grow rhubarb, cabbage, lettuce and flowering chives.

Arching overhead you'll have bamboo tripods covered with fat, drooping purple beans and deeply-hued eggplants. A background wall covered in a creeper like morning glory or passionfruit will set off the section.

It's up to you then to decide how to weave in or separate your purple plants from green foliage and other shades in your garden.

Here are a few varieties we suggest to start, based on the catalogues of Arthur Yates & Co Pty Ltd, PO Box 72, Revesby, NSW 2212 and the New Gippsland Seed Farm, Queens Road, Silvan, Victoria 3795. Send a 7 cents stamp for their latest catalogues.

Artichoke: Purple Globe (New Gippsland).

Beetroot: Early Market (Gipps). Beet tops are nice cooked as spinach. Pick when still young.

Climbing beans: Scarlet Runner (Yates). Scarlet flowers and fine quality beans, returning year after year.

Purple King (Yates) and Blue Coco (Gipps) have dark purple beans and foliage and beans turn deep green when cooked.

Cabbage: Mammoth Red Rock (Gipps) is a solid red, while Prize Red (Yates) is good for pickling.

Cauliflower: Early Purple Head (Gipps). Vivid heads like broccoli, which change to green when cooked.

Eggplants (aubergines): Early Long Purple (Gipps). Dark purple fruits.

Kohl rabi (turnip-rooted cabbage): Purple (Yates) and Purple Globe (Gipps). Both top and root can be cooked and eaten.

Lettuce: Migonette Red (Gipps) a reddish-tinged butterhead variety.

Radish and Rhubarb (all varieties).

Swede: Champion Purple Top (both seedsmen).

Turnip: Champion Purple Top (both).

You've probably thought of some varieties we have overlooked. From this list you could easily get the impression that all growing things are purple.

Others which spring to mind are currants, blackberries, grapes, wistaria, lobelia, violets, lavender and ornamental kale.

Irene has hunted up the three rather unusual ethnic recipes which follow to give you some ideas on how to use your purple produce.

Borshch. (Jewish/Russian beetroot soup)
2 to 3 uncooked beetroots.
Lemon juice.
Egg yolks.
Salt and sugar.

1. Wash and peel the beetroots.
2. Cut them up and put them in a casserole with 3 to 4 pints of water. Cook in the oven for 1½ hours at 350 degrees.
3. Strain the liquid, add lemon juice to retain the colour. Add salt and sugar to taste.
4. Cool. Add beaten egg yolks, allowing 1 yolk to each ½ pint of liquid.
5. Reheat without boiling and stir until the eggs have thickened the soup.

This can be served hot or cold.

Red Cabbage with Apples (Swedish Style).
Red cabbage.
Apples — thinly sliced.
A little sugar.
Vinegar, seasoning.
Small amount chopped onion.
Butter.

1. Shred cabbage and add seasoning, onion and vinegar.
2. Cook, covered, until tender.
3. When nearly cooked add the apples and a little sugar.
4. Add a little butter.

Indian Mashed Aubergines (eggplant).
4 large aubergines.
Juice of 1 lemon.
1 large onion.
2 green chillies.
Little oil and seasoning.

1. Put the aubergines into boiling salted water and cook until tender.
2. Chop the onion and chillies finely and mix with the lemon juice.
3. Remove the pulp from the aubergines and discard the skin.
4. Mash this and mix with the onion/chillies. Moisten with a little oil.

This can be served cold or hot, and makes an ideal side dish for curries.

DESPOT, black DORSET ram. Study by his owner, MARY THOMPSON.

BLACK SHEEP CYCLE

By David Miller

Two years ago we moved to a small town near Shepparton in Victoria and that summer we thought we would frizzle.

The hot sun pushes the mercury up for a couple of months each year and turns the waving green fields of wheat, oats and barley into stiff dry yellow stalks with fat bulging heads full of grain to be harvested.

Then the black fields of burnt stubble are ploughed into acres of chocolate soil where the few blades of grass are plucked by hungry sheep so that the thirsty soil will hold every drop of rain that hits it.

It is in this country that we have our flock of black sheep who practically support us. They are agisted on a local farm and the cost of this is usually covered by the sale of wool and ram lambs each year.

The chart shows what sheep provide in terms of basic essentials — we can nearly live off them.

SHEEP + GRASS
WOOL
- wool we can't use is sold
- spun → knitted → jumpers, etc.
- woven → rugs, jackets, etc.

LAMBS → ram lambs sold
HIDES → rugs, jackets, moccasins, bags
FAT → soap, candles
MEAT
MANURE

We get a wonderful array of naturally coloured wool from our sheep, which ranges from jet black, through chocolate and grey to a subtle grey-white; and, of course, we have a few white sheep to give us wool we can dye with lichens, leaves, bark or berries.

This adds breadth to a colour scheme that doesn't shoot you down when you notice it but feels cosy and homely to wear — especially if you're wearing the fleece from your own Annabel or Mary Loo.

Wool can be spun with a wheel or spindle, woven spun or unspun, hooked through rug canvas to make jackets and rugs or even knitted unspun by pulling out locks of wool and twisting them (sometimes called finger spinning). This produces some remarkably chunky effects and makes an effective coat for your favourite dachshound.

We use a frame for most of our weaving — they're simple, cheap, take no time to warp up, and if you're interested in creative wall hangings you can check your progress at a glance. However, we also have a 4ft wide four-shaft loom for weaving lengths of material.

All hides are tanned using the kerosene and bicarbonate of soda method. This way they will be preserved until winter when they can be made into jackets, rugs, moccasins or bags.

Candles and soap are next on the list of what's to be done. We hear of so many people who make their own soap and how it takes stains out so quickly that we can't wait to have a go at it, but usually the sun sets before we come anywhere near crossing it off the list.

fowls & goats

We keep fowls for eggs and at present they are in cages so we can collect their manure easily and place it around our sweet corn plants. Ideally we would keep them in a shed on deep litter (a mixture of straw and humus which is nearly compost). This way fresh greens can still be fed to them and the valuable manure can be recycled on to a vegetable garden and not lost in some corner of the yard.

We have two goats, a Saanen and an Anglo-Nubian. The Saanen we are milking at present and the Anglo-Nubian is yet to kid.

The Anglo-Nubian was our sixth and final goat purchase. The first goat we had died of pulpy kidney before we knew you had to inject it every six months (around here anyway). We then bought three more, and what duds they were. Hilda was an old Saanen, riddled with mastitis, whose kid died because her teats were so blocked she couldn't feed him.

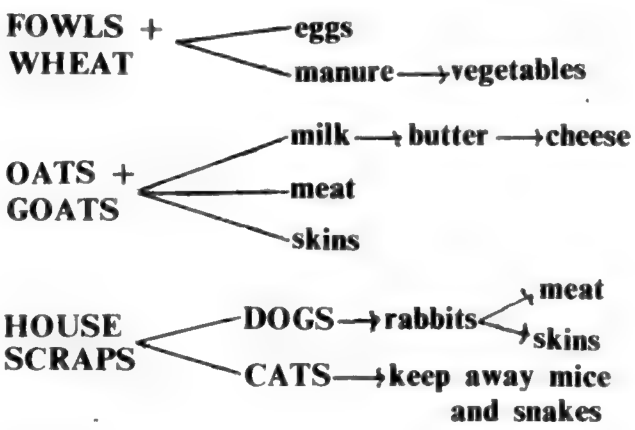
Angie, a Saanen-Angora cross, would perform six fast circuits on the end of her chain every time we approached her. She went to a stud for joining and jumped every fence they had (until she saw the buck). The third goat was Isabel who had a phantom pregnancy. We milked her for six months without her kidding at all.

I made the mistake of selling Hilda because Meg didn't want her killed. She was auctioned for 50 cents, probably for dogs' meat.

We had a good think after that and decided that none of our animals will ever be left to suffer and die in the paddock and we would despatch them ourselves to make sure it was done quickly and humanely.

(Have you ever seen how they herd animals in from the yards to be killed in an abbatoir?)

The goats and fowls fit into the cycle this way:



Butter isn't one of our strong points yet but we've made plenty of soft fresh cream goat's cheese. It's delicious on summer salads. We make bread, grinding our own flour, every other Saturday, and bread, cheese and homemade beer is another favourite on a hot day (or otherwise).

Just as a forager hunts vegetable food which he kills by plucking and eating, our dogs hunt for us. Many a night we can sit down to a feast of steaming rabbit stew with carrots and onions and fresh bread. Our Scottish Deerhounds are expert hunters. They are also tremendous family dogs — affectionate, even-tempered with children, and they seldom bark.

During the last Depression a Deerhound kept five people alive from the bounty on Dingo scalps.

We haven't said much about our vegetable garden. Well, it's quite difficult to grow anything satisfactorily up here because of the lack of water. All water is collected off the roof by running it into a well. It is then pumped up into a tank for pressure, but there's not enough to water a garden with — in fact this year we may not have enough for drinking.

However, we keep a few plants alive using dish and bath water. We had a good supply of silver beet this year, thanks to our friend Posy who dug, planted and sweated, and we hope to be munching juicy hot-buttered sweet corn soon.

You can see living away from a city involves some hard work and the time to get everything done, but it's peaceful and unpolluted. We also know where all our food comes from and how it's grown, and it doesn't pass through two or three capitalist hands before it reaches us.

We usually don't make things for sale, either because when we've put the time into some article we would rather use it ourselves or give it to a friend who reciprocates at some later stage. We find time our worst enemy, especially since we'll have to rake up some bread to buy land soon.

Does anyone know which part of Victoria is best for land buying? We would certainly appreciate your help. Also if anyone is interested in disappearing from the "big smoke" to make bread, butter, cheese, beer etc. and simply unwinding into a natural existence we'd love to hear what you're doing and what you've done.

We hope you are all on your own road to peace and contentment.

David and Meg,
P.O. Box 900, Shepparton, Victoria 3630.

tanning at home

By David and Meg Miller

Kerosene and bicarbonate of soda tanning:

This is the quickest and the best. Skins come out pure white and they are usually soft when the tanning is completed. Essentially for sheep, but has been successful on rabbits and goats — so it seems to be okay for anything.

1. Let skin dry, then scrape fat off with a blunt knife. Fat comes off easiest this way.

2. Soak in water, then wash in your favourite polluting detergent until water runs clear. (We use pure soap powder because it is non-polluting).

3. If the wool is not then clean and white the skin can be soaked in a one per cent hydrogen peroxide solution and if this doesn't work heat the brew to about 38 degrees C. (100 deg. F). If this doesn't work we can't help you. A chemist will advise you how to make your one per cent peroxide solution.

4. Hang skin wool-side out to dry the fibres. If the skin itself starts to dry then either resoak it and start the tanning, or if it only starts to dry a little around the edges it may not need resoaking. In any case tan only with a moist skin.

5. Place some plastic on your front porch and stretch the skin out on this wool-side down. The plastic protects the wool from getting dirty. Nail the skin to the boards. Then make a whipped cream-type mixture of bicarbonate of soda and lighting kerosene and apply this to the skin.

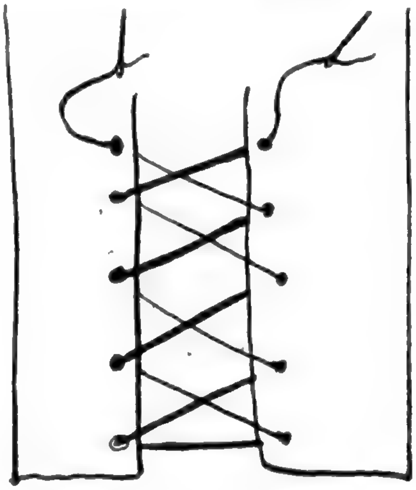
Rub it in thoroughly — this is the only hard work you'll have to do so put yourself into it.

When thoroughly rubbed in (5-10 mins or longer if you like) scrape it off with a blunt knife, minding that you don't cut the skin.

6. Repeat the application, leave for 12 hours (preferably covered and in the shade) and scrape again. Don't scrape too hard or you'll put a hole in your work.

7. Repeat this process (No. 6) four to six times, then take up the skin and it should be ready for use. Some people trim the edges to get rid of the bicarbonate.

8. The wool can be combed to get burrs and grass seeds out.



9. Instead of No. 3 you can dye the skin if you want to. We have never wanted to, but suggest you use a commercial dye first for a fast colour, or save some odd bits of skin for later experimentation.

10. We have been told that rubbing neatsfoot oil into the skin makes is washable and unshrinkable — usually when you wash your floor rugs they go all crinkly. If anyone tries this we would appreciate hearing the results sometime.

Some further notes:

1. Salt is good for removing bloodstains.

2. Try not to choose a skin with a long wool staple length the first time you try this recipe. They are harder to handle because the wool won't dry very easily.

3. Patterns for jackets, coats etc. can be obtained by spending a buck or two at your local Opportunity shop and unripping the garments you buy.

4. Jackets should be cross-stitched, using two needles thus: (illustration).

The needles go under the skin, through, over and under the other side.

5. Jackets etc. can be made reversible by glueing braid over the stitching. The skin side can also be dyed with a paint or dye.

6. Some people prefer to punch holes along the edges and sew up with leather thonging. (But remember leather thonging is made out of kangaroo hide).

7. To take the hair or wool off a hide, soak for six or seven days in lime water, which can be made by adding 3lb. of lime to every 10 gallons of water used. Rub the hair off with a blunt knife. This should be done before the skins are washed.

8. If, after tanning, the hide is not soft enough, work it over a blunt edge. This is hard work and we do it by wrapping it round the corner of a verandah post and pulling it round the post alternating with the left and right hand.

Nobody knows exactly how each tanning method works, so there is plenty of room for experiment. There are other methods, but they all include a great deal of verandah post work. This is the easiest and quickest method. Good luck.

The Candle Room

The Candle Room, 38 Upper Level, Strata Shopping Centre, Cremorne, NSW, 2090.

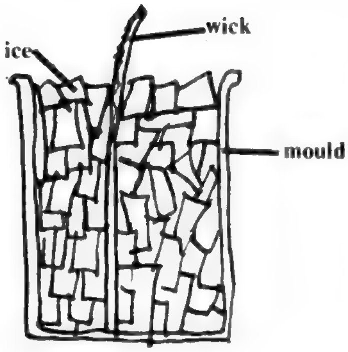
Lyn Pears and Lynne Davis sell candles and supples for candle makers, including bulk buyers. These include moulds, paraffin wax, beeswax, dyes, perfumes, stearatic acid, books, wick holders, candle kits. Send 7 cents for a price list.

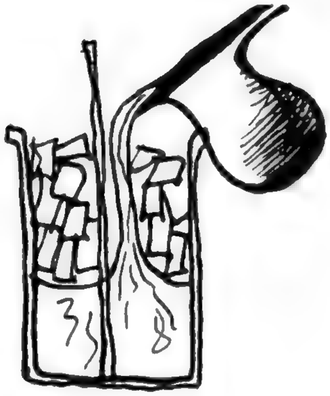
Quality of the equipment sold has been researched thoroughly.

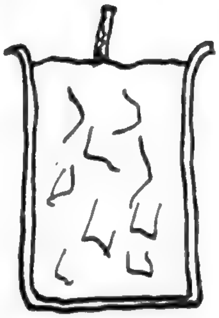
MOULDS

Andrew's candles

By Andrew Sislov







I've always wanted a small farm with animals and vegetables, and after reading EARTH GARDEN 2, it really made up my mind.

Of course I'm not old enough to have my own farm (14), so I started vegies and herbs in the backyard. I liked Neil Douglas' idea about tripods. Neil's a great person. He came to our school once (Eltham High School) and gave a fab talk, and showed us some of his paintings. I think they're marvellous.

Now, back to the vegetables. I made two tripods, and connected them together. All around the bottom of the poles of the tripod I put in the seeds. Tomatoes, Purple beans, Zucchinis and Ornamental Gourds.

Around the garden I planted no end of herbs. Stacks of dill (there were tons in the packet), parsley, thyme, majoram and mustard. They're coming along great.

I've planted some flowers, too. Nasturtium, Portulaca, Allysum, Ivy, Geranium and Sunflowers, and many more. We bought stacks of Sunflower seeds to eat, and I planted some. They grew nicely to about two inches, then my dog dug 'em up. Nothing to worry, I'll plant some more. I love Sunflowers.

Don't I get terribly sidetracked? I intended writing about candles and I went on about the garden. Anyway, making candles:

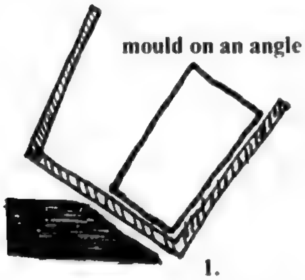
I buy paraffin wax and wicks at Dean's in Melbourne. The paraffin is 42 cents a pound, and the wicks are 9 cents a yard. You need different sized wicks for different thickness candles.

Kids' wax crayons make excellent colours. For a candle about 2-3 inches thick, and about 6 inches high I use one crayon (the big ones, about 6 inches long).

ICE CANDLES (as in the drawings above).

Candles made by ice are beautiful and unique. The wick is dipped in several layers of wax, so when the ice melts it won't wet the wick. Firm the wick in the mould, and put crushed ice in the mould. Put in a lot.

If it is finely crushed ice, it will give a pattern like fine Chantilly Lace. If you use not so fine ice, the candle will be chunky, and a bit like Swiss cheese. Then pour on the wax. It is easiest to use one colour. When it has set take the candle out of the mould and let the water drain out.



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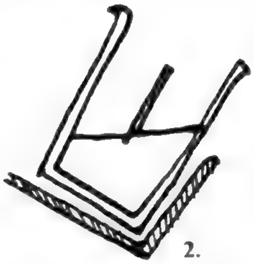

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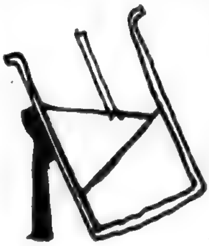
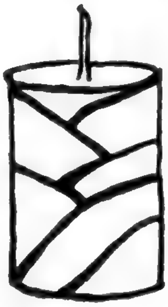


3.

Pour in first layer then tilt the other way for the next, and so on.



4.

Another interesting candle to make is a candle with stripes, but with a difference. Instead of horizontal stripes have them slanted. See pictures 1-4. This produces a beautiful effect.

Also remember when you heat the wax, put a saucepan of water under the saucepan in which you are melting the wax. This way the wax will begin to melt when the water boils. Never let the wax burn.

When you are ready to pour the wax, let it cool in the saucepan.

For these three reasons:

If you are using a plastic or rubber mould, it will melt the mould and stick and be a horrible mess;

Secondly, if you are making a layered candle, the hot wax will slightly melt the recent layer and the colours will intermix;

Third reason — the most important — if the wax is too hot when you pour it in, the outside of the candle will become bubbly looking, and not nice.

NATIONAL HEALTH FEDERATION

"Each should have freedom for personal decisions in relation to health of body and mind.

"To maintain this freedom there must be a large voice of public opinion expressing a strong attitude to protect us from the threat of legislative moves which would limit this freedom of individual choice".

These are part of the aims of the National Health Federation of Australia, an association which has the health and happiness of all Australians at heart.

Established more than 18 months ago, the NHF has grown strongly, and now has active branches in each State.

The NHF insists that the Department of Health in Australia acts as a guardian to "protect the community" from the deleterious effects of any programme, however large or small, which may prove a health hazard.

Among its primary concerns at the moment is the New South Wales Therapeutic Goods and Cosmetic Act, approved in March 1972, which sets controls which will treat natural herbal remedies in the same way as chemical drugs. The Act, when in force, will even forbid the use of the word "natural" in describing these remedies.

The Act sets up an advisory committee, made up of representatives of Government and professional bodies and of the pharmaceutical and toiletries manufacturing interests, national advertisers and the advertising media.

There is no representation from any organisation to represent natural health interests. The Government has decided to make its own definitions of what is natural and what is not.

The NHF is already protesting against this legislation at the highest level. To encourage high standards of professionalism in all aspects of natural therapy, the NHF is supporting the sixth convention of the South Pacific Federation of Natural Therapeutists being held this February.

The convention has as its aim the achievement of full recognition or registration by the Government for all the "drugless" healing professions.

In the United States, this "concentrated voice of public opinion", or lobbying as it is called, has proven an effective means of producing action in these matters.

The National Health Federation of America, founded in 1955, has a membership of 60,000 which makes it the country's largest organised, non-profit health consumer group.

The NHF of Australia has access to the US group's information on any subject. This has helped considerably in making its regular Bulletin a lively, well-informed journal. Its publisher, Robert Wilmot, was the Federation's honorary secretary during its first pioneering year.

Action Groups, made up of about ten members who meet regularly in a semi-social atmosphere, are an important aspect of the NHF. These act as "ginger" groups to promote the Federation's aims or work on specific area problems. There are also Youth Action Groups, which campaign against pollution, but also find time to go on picnics and learn about recycling and organic gardening.

Membership of the National Health Federation costs $5.00 a year and includes the six yearly copies of the "Bulletin". Students can join for $3.00.

For further information write to the secretaries in each State.

NSW: Mrs Pat Burgess, PO Box 47, Killara, 2071.

Victoria: Mrs J. Armstrong, 21 Oxford Street, Burwood, 3125.

South Australia: Mrs J. Hill, 412 King William Street, Adelaide, 5000.

Tasmania: Mr T. W. Davenport, 5 Penguin Road, Ulverstone, 7315.

Western Australia: Mr M. Earles, 804 Albany Highway, Victoria Park, 6100.

10 days in May

Ten days in May. In northern New South Wales, maybe near Nimbin. That's the time and the probable place of the 1973 Aquarius Festival, being organised mainly by Johnny Allen and Graeme Dunstan.

The vision is breathtaking. Here are some of the aims:

- **That the 1973 Aquarius Festival be more than a place where there is a concentration of arts and artists. That the style of the festival, the structures and forms of the community that make up the festival itself be an art form. The aim is for cultural experience through the life style of participants.**
- **That the theme of the festival be survival on earth and a living affirmation that we do not need to be sold our culture.**

In other words, the festival will be the people attending and the events will be what they generate.

Some of the things so far planned are: learning webs (uniting teachers and learners), exhibits of Whole Earth survival gear (an alternative Agricultural Show), living in harmony with the natural environment, cheap wholefood catering, daily media, survival gardens.

Groups like Harpo, from Brisbane and the Alternate Community Telephone from Sydney will be represented. Those ten days in May could be "a prophetic vision of the world we wish to live in", which is what Aquarius is seeking — or it could be a disaster. This rests with those attending.

We hope it will succeed, and we think we'll be there. There is a mass of information about the festival available in "Grassroots Express", the last of which was published as part of "Cold Comfort", Vol 1, No 6 (December). Price 20 cents.

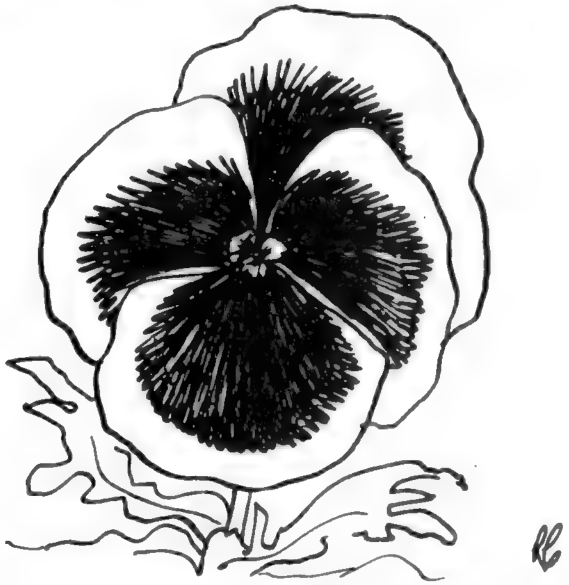
Send a 12 cent stamp for "Grassroots Express" to: Aquarius Foundation, AUS, 344 Victoria Street, North Melbourne, Victoria, 3051. For regular information send $1.00.

If you want to help with the catering, contact John Geake, 17 Bridge Street, Balmain, 2041, who is coordinating this. Some people are already growing crops like sweet corn for festival food. If you are doing this, or can plant survival gardens or work on gardens there, drop a line to Aquarius also.

Maybe we'll see you there.

The Names of Flowers

ORCHID comes from the Greek, '*orchis*', a bag, because all orchids have these curious little bags.



PANSY is the French '*pensee*', thought. So Shakespeare, in Hamlet, has Ophelia name them: "Pansies for thoughts".

NASTURTIUM comes from the Latin words '*trapaeolum majus*' meaning 'twisted nose', from the way the flower looks.

DAISY is the Anglo-Saxon '*daegesage*' (the day's eye)—because it shuts its eyes and goes to sleep at sunset.

Honey the Healer

Only bees can make honey. Scientists have analysed honey and learned its composition, but they cannot make it synthetically.

Honey is not a natural food in the same sense that a fruit or a vegetable is. It is a manufactured product.

Foraging bees collect nectar from flowers, carrying it in their "honey sacs". In the hives this nectar is processed, mainly by evaporation, until it is the thick ripe liquid we know as honey.

Honey is a fast-acting energy booster. This is because the sugars present in honey are simple sugars which are absorbed almost immediately into the bloodstream. This also makes honey a heart stimulant.

The simple sugars are dextrose (glucose) and levulose (fructose), which together make up about 75 per cent of the composition of honey. Its other ingredients are water (about 17 per cent) and small amounts of protein, salts, dextrin, plant acids and various residues.

Dextrin is a gummy substance which makes honey easily digestible.

Honey also contains traces of calcium, iron, sodium, potassium, magnesium, phosphorus, sulphur, chlorine and iodine salts as well as tiny amounts of vitamins B2, B6, C, K and H.

The food we eat should have a balance of acids and alkalis. Excess acid disturbs the stomach, tends to lower the body's resistance and increases fatigue.

Honey helps to maintain this balance as it is potentially alkaline. Fruit, vegetables and milk are alkaline foods, while meat, fish, fats, eggs and cereals are acid.

Honey is an antiseptic and an antibiotic. It kills bacteria, because it deprives micro-organisms of their vital moisture. It also appears to promote tissue growth in cuts and wounds.

A favourite old-time remedy for coughs and respiratory troubles is a glass of honey and hot milk or honey and lemon juice.

In fact honey has been used as a cure-all, internally and externally, since ancient times. Hippocrates, 2,500 years ago, treated wounds and diseases with honey.

Pliny wrote: "The fat of fish combined with honey is excellent for infected wounds. Honey is good for abscesses in the mouth".

Today scientists know that cane and beet sugars in the mouth form harmful acids which cause tooth decay. As it is an antibiotic and potentially alkaline, honey acts as a mouth disinfectant.

There has long been a controversy over whether or not bee stings will cure arthritis and rheumatism. This belief grew out of European folklore and has been backed up by recent research in the USSR.

Tests carried out in the Soviet, Switzerland, Germany and the United States have shown that children who were given honey instead of sugar developed better physically and were more resistant to the usual children's diseases.

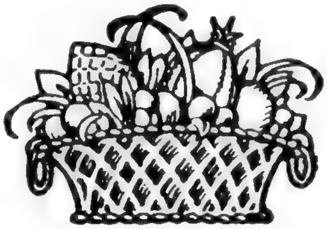
Some diabetics have been able to cut out daily injections of insulin by regular doses of honey as their energy source. This is one of the most significant areas of current experiments.

In 1921 an Austrian, Dr Rolleder, carried out a controlled test on a group of children in a Swiss orphanage. He gave half of them a large spoon of honey twice a day, while the other half had no honey at all.

He found the haemoglobin content of the blood increased by 8½ per cent in the honey-eaters and decreased in the others. The boys who took honey also developed better physically.

See also: Curative Properties of Honey and Bee Venom, N. Yoirish, Moscow, 1959, 198 pp.

About Honey, P. E. Norris, Thorsons Publishers Ltd, London, 1954 (reprinted 1971), 64 pp.



Honey is sweet and smooth and can be used instead of sugar in nearly all kinds of cooking.

Levulose is the sweetest sugar known, twice as sweet as cane sugar, and honey is the richest source of levulose.

If you find honey difficult to handle and measure — stand it in hot (but not boiling) water for 5 to 10 minutes and you'll find that it will flow more smoothly and easily and there won't be a sticky mess. Honey should not be stored in the refrigerator, but at room temperature.

The ancient Hebrews used honey as a leavening agent in bread.

Because of its antiseptic qualities, honey is often used in skin preparations. A good face cream can be easily made by mixing honey and a beaten egg white with a few drops of almond oil until the cream is smooth and fine.

Tea and other drinks gain a distinctive flavour when sweetened with honey, and no breakfast is complete without some honey for the energy to "get going" — it's great on any cereal.

Blend or mix a cup of honey with a cup of butter for a delicious spread for toast, crumpets or pancakes.

An unusual marinade for grills is made by mixing ¼ cup of honey, ½ cup of sherry, 2 tablespoons of soya sauce, a clove of garlic (crushed) and salt and pepper.

Some recipes using honey follow:

GWEN'S HONEY CAKE

1 cup milk
2 cups wholemeal flour
2 tablespoons honey
1 tablespoon marmalade, or an extra spoon honey
1 teaspoon bicarb of soda (baking powder)
sultanas, nuts if you like

Add milk to flour and mix. Mix jam, honey and baking powder until it begins to fizz. Add it to flour and milk. Mix well. Put in a greased tin and bake at 350 degrees for 1 hour. Sultanas throughout or nuts sprinkled on top make a nice addition. This cake is good to eat with butter. (From Gwen Wallace, of Wodonga, Victoria).

CARAMELLED CUSTARD

2 eggs, beaten
1/3 cup honey
1 pint scalded milk
1 teaspoon vanilla
1 tablespoon butter
pinch salt

Put a small amount of honey in the bottom of each cup or bowl and swill it around.

Add honey to eggs. Gradually stir in the milk and beat well. Add the salt and the vanilla. Pour into the honeyed bowls and dot the tops with butter. Bake at 350 degrees for about 40 minutes until set. Serve hot or cold.

ZABAGLIONE (for 4)

4 egg yolks
4 tablespoons honey
¼ pint whipped cream
1 teaspoon gelatine
4 tablespoons marsala
2 tablespoons brandy
a few drops of vanilla

Beat egg yolks, honey and marsala over hot, but not boiling, water until it thickens. Soften gelatine in water, and add it to egg mix. Place the pan in a bowl of ice and stir the mixture until it is thick and free from bubbles. When nearly cold add the brandy and cream. Pour into individual glasses and chill.

BACKLAVA

1lb almonds
¼lb butter
3 cups fine sugar
pie pastry (fine strudel type)
honey syrup

Mix almonds, butter and sugar into a paste. Spread out this paste on thin pastry and stack them one on the other in layers. Press the outside edges together. Make cuts on the top surface. Bake the "stack" in a hot oven until it is golden. Cut into small pieces and serve with honey syrup.

HONEY SYRUP

Cook equal parts of honey and sugar with a dot of butter and a small piece of cinnamon until smooth and of an even consistency.

GLAZED CARROTS

Boil small whole carrots in a little water until they are tender but still firm. By the time the carrots are cooked there should be not water left. For each pound of vegetables add 2 tablespoons of butter or margarine, 3 tablespoons of honey, a sprinkling of sultanas, a pinch of salt and cook, stirring until all the carrots are well "glazed".

SALAD DRESSING

2 parts oil, 1 part vinegar, 1 part honey and salt and pepper. Shake all the ingredients together vigorously.

On a hot day this lemon drink just 'hits the spot': juice of one lemon and its rind finely grated (a juicer is fine for this), honey to taste, boiling water.

You will have to mix the ingredients according to your own taste. We use ¼ cup of lemon juice, 1/3 cup of honey and 1 cup of water. Chill and serve with a few mint leaves in each glass.

HONEY BARS: Adelaide: Monte Klinger's Honey & Vitamin Bar, Adelaide Arcade — 45 varieties to try.

Sydney: True Health Aids, 443 George Street — about 38 varieties.

Food like Grandma made

The New York Times Natural Foods Cookbook, Jean Hewitt, Souvenir Press, London, 1972, 424 pp. Suggested price $7.30.

"Around the turn of the century," says Jean Hewitt in the preface to this book, "before the advent of large-scale mechanised farming and modern food production methods, people took the special pleasures of fresh, natural and unrefined foods for granted".

"At least once a week the fragrance of bread baking filled the house . . . farm animals were allowed to roam and develop without man's interference . . .

"Sacks and barrels at the general store were filled with unrefined and unprocessed ingredients that had short shelf-life, but lots of flavour".

Grandma's day may be gone forever, but the 700 recipes selected by Jean Hewitt make it easier to recapture the goodness and real flavour of the old-time style of cooking.

The recipes call for basic, fresh, unrefined and "non-highly-processed" ingredients: natural foods. Some of the creative ideas come from "grandmothers" who were Chinese, Mexican or Italian.

Jean Hewitt was born in England, but lives in the United States, where she is in charge of the New York Times test kitchen and writes for the newspaper's women's page, and the Sunday magazine.

There is a comprehensive section on bread baking, with dozens of different loaves, muffins and pancakes. Chapters cover fully yoghurt making, growing bean sprouts, preserves, grains and cereals as well as the more expected soups, poultry, fish and vegetarian dishes.

Each chapter is introduced with a few words on the subject, with sometimes a brief history, or a little homespun philosophy to round it out.

They aren't all plain dishes either. There's falafel, borscht, gazpacho, kasha, chicken chow mein and kebabs. If you intend to start a more healthy diet, here is an excellent guide to add interest to the changeover.

If you have been eating and cooking natural food for a long time, it will be an added delight.

Jean Hewitt makes no claims for natural and organic eating as miracle cures for any diseases or condition. "The emphasis is on the flavour potential and nutritional value of the ingredients," she says, "and not on any specific benefits that may be attributed to them".

Nor is there any attempt to cater to any particular dietary beliefs. Cakes, pies, biscuits and hot recipes are there with those concocted purely from nuts, seeds, grains, fresh and dried fruits and vegetables.

The quaint, stylised drawings of food and animals and comments at the end of many recipes give the book a friendly touch. It's the kind of book you can keep for years, always confident that it will offer fresh cooking ideas.

American names for ingredients and food, like "cookies" and "broiled" are scattered throughout, but there is a useful glossary and British measurements equivalents.

BREAD

Bread has become symbolic of the food of man.

The origins of bread making date back to neolithic times when the seeds of wild grasses were gathered and baked on hot stones. Baking made the separation of the grain from the husk easier.

Flour was the next development. It was made by pounding the grain. This was then mixed with water or milk to give a mash. When this mash was baked on hot stones or in ashes, the first bread was made. Bronze age "cakes" of this sort have been found by archaelogists.

The final step in the process was the leavening or rising of the dough. This was discovered by the Egyptians, who left their dough out in the sun to "go bad". This caused fermentation and so bread reached the final form we know today after thousands of years.

Now almost all bread is leavened and the most usual agent is yeast. There are two types of yeast — cakes of compressed yeast and the dry powder form. The compressed type doesn't keep well and must be made into a liquid before use.

Now "active" dry powdered yeast can be bought which needs no soaking or preparation, and if it is this type you decide to use then TANDACO brand has the added bonus of an excellent little 32-page booklet of recipes and very handy hints.

One tablespoon of dry powdered yeast is equivalent to 1½ ounces of compressed yeast, and these are interchangeable in all recipes.

Flours vary in their ability to absorb water, so the amounts of flour and water in recipes are not fixed.

Wheat flour is the only one with appreciable amounts of gluten in it, so all bread has at least some wheat flour. Gluten is a protein and it gives bread texture and flour its baking qualities. Gluten is developed by kneading.

Wholegrain bread may need more kneading. It tends to be heavier than other breads.

Bread making is an art and so must be practised. Love helps, and even if the first tries aren't so good to eat, the smell of baking dough wafting through the house will make it all worthwhile. The first time we made bread the walls, floor and myself were splattered all over with bits of dough.

Here are some hints which may help:

Use ingredients at room temperature.

Dough is ready to be kneaded when the flour and the liquid are well mixed and the dough leaves the sides of the bowl.

To test whether the dough is sufficiently kneaded, push your finger in the dough and watch what happens. The impression should slowly disappear, which means the dough is nicely elastic.

After kneading, oil the dough to stop it cracking.

Brush the surface of the loaf with milk just before you put it in the oven. This will darken the crust.

Rye flour makes the dough less elastic and more sticky, so it is best to wait to make rye loaves till you are a little experienced.

Double rising gives finer texture.

Yeast is at its most active at a temperature of between 80 and 90 degrees, so dough must be left in a warm, but not too hot, place. This can be obtained near the stove or a heater — or put it outside in the sun.

To test if loaves are cooked, tap the bottom of the bread. It should sound hollow.

If you are making a few loaves at the same time, make sure that there's enough room for plenty of air to circulate around the pans in the oven.

Bread can be stored for months in a deep freeze.

Loaves should be loosened as soon as they are taken from the oven. Turn them upside down to allow steam to escape or the bottom crust will become wet.

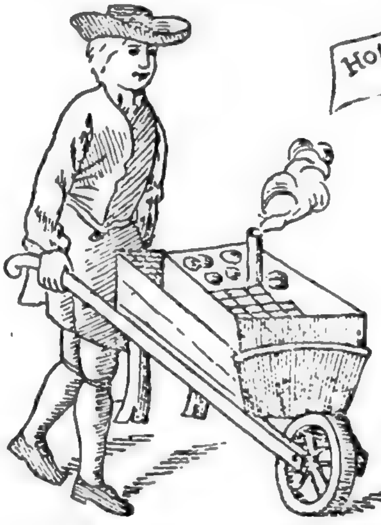
A lot of readers have sent in letters telling us how they make their own bread. Thanks. Here are a few to share. Happy baking!

Remember as you make your bread the old Scottish saying:

"The whiter your bread,
The sooner you're dead."

PLAIN WHOLEMEAL BREAD

2lb wholemeal flour
1 packet (1 tablespoon) dry yeast
1 tablespoon honey
1 teaspoon salt
1 pint warm water (approx)



HotGingerbread,SmokingHot

½ cup safflower oil.
½ cup raw sugar.
2 eggs.
1 cup molasses.
2 teaspoons baking soda.
1 teaspoon each cinnamon, ground cloves, ground ginger.
1½ cups wholewheat flour.
¼ teaspoon salt.
½ cup wheat germ.
½ cup soy flour.
1 cup hot water.

Yield: Eight servings.

1. Preheat oven to 350 degrees.

2. Beat the oil, sugar and eggs together until very light and thick. Beat in the molasses.

3. Sift together baking soda, cinnamon, cloves, ginger, salt and flour. Stir in the wheat germ and the soy flour and add to the beaten egg mixture with the hot water.

4. Turn into an oiled 12 by 8 inch baking pan and bake for 30 minutes or until done.

From The New York Times Natural Foods Cookbook.

Mix the dry ingredients. Add the water and honey, slowly beating all the time until the dough is well mixed and leaves the side of the bowl. Put it on a lightly floured board and knead until smooth and elastic, about ten minutes. Cover and leave to rise until it has doubled in bulk. Punch down and divide into two loaves. Place in the pans and let rise again until double the size. Bake at 400 degrees for 35 to 40 minutes.

HEALTH BREAD (sent in by Don Nash of Newtown, NSW)
1½lb wholemeal flour
1 cup millet meal
¾ cup skim milk powder
2 cups cold milk
2/3 cup water
1½ ounces compressed fresh yeast
3 teaspoons honey
4 teaspoons salt
2 tablespoons sunflower seeds

Boil water, add to milk. Add 1/3 of this to honey — leave until lukewarm then mix in yeast. Cover, stand in warm place 20 minutes. Sift flour, millet meal, milk powder and salt, sprinkle sunflower seeds on top.

After yeast has risen, add the yeast mixture to rest of milk and water (must not be too hot). Add gradually to dry ingredients and mix to a soft dough.

Beat for 5 minutes with a wooden spoon until smooth. Divide into two tins, smooth tops with a spoon dipped in water. (Sesame seeds may be sprinkled on top.) Cover loaves, leave to rise in a warm place 30 to 40 minutes. Bake in hot oven for 40 to 45 minutes.

Frances, of Newport, NSW sent us this recipe for 1 loaf or 12 buns:
4 cups W/M plain flour.
1 cup soya flour, wheat germ or your choice in flour.
1 inch square of baker's yeast.
Large mug warm water.
1 tablespoon honey (molasses makes type of black bread).
1 teaspoon kelp, pinch of salt.
1 tablespoon powdered milk.
1 tablespoon brewers yeast.

With your fingers break yeast into warm water and dissolve with honey, leave standing on warm oven (no drafts) for about 15 mins, until it starts foaming or you can hear it hissing.

Mix all dry ingredients in a bowl and when the yeast is ready stir it in till moist. (If you decide to make buns add 2 tablespoons of oil.)

Knead for about 5-10 mins (depending on your perseverence), place on oven in baking tin and let rise.

Bake in moderate to hot oven for about 1 hour (buns 15 mins). It's nice to put sesame seeds, celery seeds, caraway seeds into the bread and anything you like, although too many heavy flours tend to make the bread heavy and hard to eat.

CHAPATIS (Indian Bread).
4 ounces wholemeal flour.
Pinch salt.
Water.

1. Sieve the flour and the salt.
2. Blend with enough water to give a stiff dough.
3. Divide into lumps the size of an egg.
4. Roll out thinly like a pancake.
5. "Bake" in frying pan.
6. Press the bread with a cloth before it is removed from the pan and it fills with air and puffs up.

IRISH BARMBRACK. This is more of a cake than a bread. It's easy to make and good to eat, especially spread with butter.
1lb dried fruit.
½ cup raw sugar.
1 cup cold tea (no milk).
2 cups self raising flour.
1 egg beaten.

Soak the fruit and sugar in the tea overnight. Add the flour and egg and mix well. Bake at 375 degrees for 1½ hours.

Here's one sent in by Mrs Rhonda Winger of Bulooma, Qld.
1 heaped desertspoon yeast
1 heaped desertspoon sugar
1 level desertspoon salt
6 cups flour
½ pint tepid water

1. Put in bowl water, sugar and yeast. Leave until frothy.
2. Sift salt and flour on to large board.
3. Make well in the middle and pour in yeast mixture. Mix carefully. Add more water or milk to make a consistent and smooth dough.
4. Knead for 5 minutes.
5. Leave to rise for 2 hours. Cover with damp cloth to prevent crust forming.
6. Knock back, knead to original size. Shape into one large or two small loaves or rolls. Place in tins or trays.
7. Leave until double in bulk again.
8. Bake at 450 degrees for about ¾ hour.
9. When still hot bread can be wiped with butter to golden.

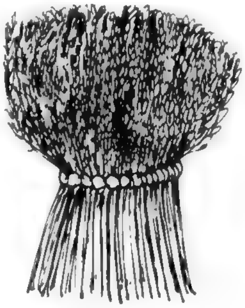
This one was sent in by Fran Gray of Victoria. It is a pretty easy one:

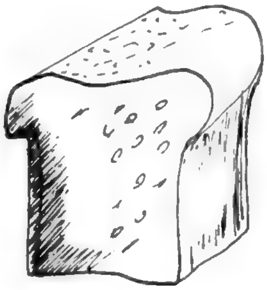
Mix 1lb of stoneground flour and 1 teaspoon of salt in a large bowl. Mix ½ ounce of compressed yeast and 1 teaspoon honey in a small bowl with 2½ ounces of water (mix by rubbing until there are no lumps left and it becomes liquid).

Allow to stand for 10 to 15 minutes. The mixture will froth up.

Pour yeast mixture into flour and add about 11 ounces of warm water. Mix by hand till dough is elastic. Place dough into warm greased tin and sprinkle with sesame seeds or poppy seeds. Place tin in a warm place and leave covered for about 20 minutes or until the dough is ½ an inch from the top of the tin.

Bake at 400 degrees for 50 to 60 minutes.





Once you have started making your own bread you'll begin to realise just how many types of bread there are. Different kinds of flour make a change and there are lots of things to add to loaves.

For instance Herb breads — to any dough add ¼ to ½ teaspoon of thyme and oregano. Another combination is nutmeg and sage.

To rye bread add some orange peel for an unusual bread that's perfect for cheese. Rolls and buns can be made sweet with a little extra honey or sugar and then either some lemon peel or some ground cardamon added.

There are two chapters on bread and muffins in one of our favourite cook books, The Natural Foods Cookbook by Beatrice Trum Hunter. In the 46 pages she devotes to the subject are hints and explanations and even how to make your own yeast.

Included are specialty breads like barley bread, cheese bread and potato bread as well as many rye, soy, corn and wheat types. There's a section on sour dough and quite a few continental varieties.

We enjoy the results of B. T. Hunter's advice. The book is simply written and contains over 2,000 recipes. It isn't strictly vegetarian, the emphasis is on meals with flavour which lead to health and a greater energy.

The Natural Foods Cookbook, Beatrice Trum Hunter. A Pyramid book, 1967, New York. 368 pages. $1.25. We bought our copy from Mother's Bookfarm, 1 Coromandel Place, Adelaide, SA 5000. Add 20 cents for postage.

Sierra Club Bulletin

The Sierra Club Bulletin is big, glossy and beautifully produced.

Its pages are filled with breathtaking colour photographs of insects, wildlife and the outdoors, which become the famous calendars and posters sought after by collectors.

The magazine is also very American. Well-designed advertisments recommend tents, backpacks and climbing boots. There's an artful ad featuring a forest poster which turns out to be selling Datsun cars, and a back page blurb on: "How sleeping bags with Du Pont Dacron Fiberfill II conquered Mt McKinley".

Of course, its outlook is wider than that. It has to be to satisfy the Sierra Club's 140,000 members and countless non-member readers. There's no doubt that The Sierra Club Bulletin is the best source of conversation information published in and about the United States.

Founded in 1892 the Sierra Club works "to restore the quality of the natural environment and to maintain the integrity of ecosystems..." and invites the public to "study, explore and enjoy wildlands".

Subjects in recent issues we've seen covered Biological Control of Pests, the Stockholm Conference, Strip Mining — The Biggest Ripoff, Wild Horses of the West (with some gory details of the harvest of live horseflesh for dog food), The California Coastline — It's Up To the People.

Regular features include book reviews, editorials and news and commentary — which contains the latest details of the Club's lawsuits against various authorities, such as the Agriculture Department and the Forest Service.

Sierra Club Bulletin, ten times a year. Price $5 a year (non-members). No extra charge for mailing to Australia. Address: Sierra Club Member Services Subscription Desk, 220 Bush Street, San Francisco, California, 94104, USA.

All in its place

Catherine Osgood Foster is a gardening writer involved with the wholeness and balance of nature, its seasons and cycles and its birth and decay.

She allows a place in her garden for all living things — birds, beasts, plants, flowers, insects, bacteria and fungi. Even for man, who can so easily, through ignorance or spite, upset this delicate web of life.

Her book, the organic gardener, published by Vintage Books, reflects this outlook in its ideas and usefulness. The naive, almost child-like drawings of Karl Stuecklen add more delightful emphasis to her message.

Mrs Foster has been gardening and farming in Vermont, USA for 40 years. She teaches literature at Bennington College and practises what she preaches at her home near Old Bennington, which is surrounded by trees and shrubs. Her husband, Thomas H. Foster is an ornithologist and critic.

The chapter headings tell part of the story. For example: "rich soil, few pests, and a varied environment; composting for the cycle's sake; the soil in your backyard lives".

This is a practical book. Suggestions start with ideas like growing a few radish seeds on a wet blotter in the kitchen to learn about seeds and basic botany. Then follow experiments like growing tomatoes, carrots and potatoes in pots, sharpening your observation on how plants grow. Finally there is discussion on the planning and layout needed to convert your suburban backyard to a garden allotment.

Mrs Foster tells us some new methods of biological control in the garden, how to attract birds, "trap" plants which will take away the attention of pests from plants you wish to protect, and ways to encourage beneficial insects like ladybirds and praying mantids.

She discusses the nitrogen and the carbon cycles and the recycling of organic wastes and composting practised by all good organic gardeners. Though written for the United States, the thorough notes on plants and herbs are still valid for Australia and offer many new ideas.

* * *

Dover Publications have issued another welcome reprint of a book by Eleanour Sinclair Rohde, this time one which has been out of circulation for thirty years.

Culinary and Salad Herbs differs from most of her other books because it is not a literate evocation of herb growing in past centuries, but a small modern "Herbal", based on the author's own practical experiences.

The work was originally published by Country Life Ltd, London, in 1940 and turns around those herbs which would not have been out of place in a Tudor or a Victorian garden.

All the old familiars are there, such as thyme, parsley, mint and garlic, as well as the more unusual plants like corn salad, asparagus pea, orach and rampion.

Each herb is treated individually. We are told a little of the origins, botanical behaviour and medicinal uses of each. That extra element of the mystery and intrigue with which E. S. Rohde books are imbued is not lacking here.

Hippocrates, the "father" of medicine, advised: "Make your food your medicine and your medicine your food". This book offers some good advice on how to do just that.

FROM "the organic gardener".

The section on food values gives many interesting comparisons: that parsley is the richest source of vitamin C and that broccoli and cauliflower are as rich in vitamin C as oranges.

Recipes include green butter, parsnip and cheese salad, potato and fruit salad and "cheese of seven herbs". E. S. Rohde recalls that, when she was a child, parsley was grown in hanging baskets.

* * *

In contrast, we found Cooking With Flowers, by Zack Hanle a thin, "over-pretty" book, with little to recommend it to Australian readers. The idea is fine, and one that we have already suggested. Fiddly, involved recipes, with many ingredients for little result, printed on garish pink-bordered pages.

Not for us.

The organic gardener, Catherine Osgood Foster, Vintage Books, New York, 1972, 244 pp and index. Drawings by Karl W. Stuecklen. Suggested retail price in Australia $3.70.

Culinary and Salad Herbs, Their Cultivation and Food Values with Recipes, Eleanour Sinclair Rohde, Dover Publications, New York, 1972, 106 pp. Suggested price $1.60.

Cooking With Flowers, Zack Hanle, New English Library, London, 1972, 93 pp. Suggested price $1.35.

The three books are distributed in Australia by Tudor Distributors.

earth garden's key

When you eat his "Health & Fitness" wholewheat meal you are getting "the wheat grain, the whole grain and nothing but the grain," says miller Milan Posavec.

When it comes to wholemeal millstone grinding, Milan Posavec is Australia's self-declared champion. He has no rivals.

At the Continental Flour Mill, at Epping, Victoria, Milan Posavec uses granite stones to grind organic wheat bought direct from the farmer (for which he has a permit from the Australian Wheat Board).

In stone milling in the traditional way the wheat grain is gently rubbed down, and retains the bran, the "germ" and mineral salts and trace elements.

Because of the wheat oil content remaining in the "germ", less fat is required in recipes for cakes, pastries, puddings and scones about 1/5th less than for commercial flours.

Milan Posavec began stone grinding of wholemeal ten years ago. Looking back on his 23 years in Australia he told us recently: "I did what was always my wish, to supply to the people of Australia the world's best, organic, granite stoneground wholewheat meal".

He warns against carborundum and emery grinding of wheat, which, he says, will badly affect people's health.

FOR SALE

Brisbane's Prana Health Foods and Asian Gifts, 398 Milton Road, Auchenflower, Queensland 4066 is for sale. The price is $12,500, made up of: stock $5,000, fittings $4,000 and goodwill $3,500.

For further details write to Noel Parsons.

Alex and Helen Devereux have spent 26 years perfecting natural methods of agriculture at their mixed farm and orchard at Cottonvale in Queensland.

They grow mainly apples, stone fruit, pears and vegetables such as tomatoes, potatoes and pumpkins.

Harvesting is done with horse and dray. "We have the old type mixed farm with any worthwhile modern improvements — which does not include a tractor," says Mr Devereux.

"You cannot grow tractor food, nor can one breed them. Also they give quite an addition to the air pollution."

ORGANIC PRODUCE

Country supplies:

Bananas 12 cents lb and wheat available all-year-round. Best for people who live near as freight is high. Also tropical fruit like soursop, five corners, jackfruit and monstereosa late summer.

Mrs J. Spear, Harmony Farm, Black Mountain Road, Kuranda, N. Qld 4870.

Mrs Spear also has books on organic gardening and Norweigan "Algifert" seaweed extract for sale.

Sun-dried fruit and nuts: John Fielder, Knudsen's Lane, Cairns, N. Qld 4870.

Apples: Season late February through winter, $3.40 per bushel. Freight payable on delivery in Queensland. NSW add $1.50 with order.

Stonefruit, December-January, pears end of January. Tomatoes, pumpkins, potatoes and other vegetables send 7 cents stamp for further information. Mr A. Devereaux, Bracken Brae Orchard, Cottonvale, Qld. 4378.

Vegetables for sale at farm, weekends or by appointment: J. Richardson, Robson Road, Kenthurst, NSW 2145. Tel: 654 1101.

Fresh bean sprouts, fruity cakes and wholemeal tarts: Child Study Health Farm, Windsor Road, Vineyard, NSW 2765.

Wheat, barley and linseed: Ron Turnbull, Mt Bute, via Lismore, Victoria 3324.

Apples: Mr and Mrs Wright, Wildwood Apples, Red Hill, Victoria 3937.

Macfarlane's grain: Available in 180lb. quantity only. Soy beans 10 cents lb., millet (unhusked) 12c lb., sorgum 6c lb., maize 6c lb.

Send orders to: Macfarlane Bros., M/S 126, Harrisville, Queensland 4305. Note: Soy beans have been fly marked (they're really organic!)

Smaller quantities, 20lb. minimum: Wholefoods Co-operative, 451 Milton Road, Auchenflower, Queensland 4066. Prices are 2 cents lb. dearer. Transport: freight collect

Stoneground wholemeal and ryemeal, minimum 50lbs: Milan Posavec, Block 11, Railway Road, Epping, Victoria 3076. Price: Wholemeal, 50lbs $5.00 plus rail freight; ryemeal, 50lbs $6.00 plus freight. Free delivery 30 mile radius of Melbourne GPO.

CITY OUTLETS

City outlets: Fruit and vegetables.

Sydney: Phoebe's Health Shoppe, Five Ways, Paddington.

Hygienic Food Supplies Pty Ltd, 97 Ryedale Road, Ryde.

Melbourne: QOL Whole Foods, 322 Chapel Street, Prahran.

Bruce Standish, 723 Glenhuntly Road, Caulfield.

Angelo D'Agostino, 601 Station Road, Box Hill.

Adelaide: Fricker's Food Co, Adelaide Market.

Brisbane: Prana, 389 Milton Road, Auchenflower.

SEEDS

Organically-grown seeds, telephone and climbing beans: David Stephen, 12 Delta Avenue, Taroona, Hobart, Tasmania.

EGGS

Chicken eggs: Syd Bilhorn, Toplayer Farm, Port Albert, Victoria 3971.

Duck eggs: Peter and Priscilla Wilkinson, Maldon, Victoria 3463.

HERBS

Beaufort Herb Farm, PO Box 90, Cootamundra, NSW 2590. Send 30 cents for catalogue.

Did you know that popcorn really does grow on corncobs? It's a type of sweet corn and can be grown in the same conditions.

To pop remove the corn niblets from the ears. Heat some oil or shortening (Copha is good) in a heavy saucepan until a smoke haze rises, then put in the corn and quickly replace the lid.

The corn inside will pop like fireworks. Remove from heat after five minutes and allow to cool.

Organic popcorn on the cob is available from Geoff Wallace, RMB 1059, Wodonga, Victoria 3690. Mr Wallace also has available organically grown sweet corn and Blue Lake bean seed for sprouting. Write for details of supply.

CAKES & BREAD

Feedwell Foundry, Greville Street, Prahran, Melbourne. Made from stoneground flour supplied by Milan Posavec.

to natural sources

EATING OUT

Sydney: The Natural Food Centre, 150 Liverpool Street, Darlinghurst. Opens noon to 8 pm.

Blooms Health Foods, 400 George Street (health snacks).

The Whole Meal, natural food restaurant, Angel Arcade, off Pitt Street. Open until 8 pm.

Sanitarium Health Food Co, 13 Hunter Street.

Marscell's Healthy Meals, 16 Challis Avenue, Potts Point.

Melbourne: Naytura, 24 Centre Place and 300 Little Collins Street.

Klink's Health Food Bar, 313 Swanston Street.

Brisbane: Mr Natural's Food Store and Kitchen, 132 Sir Fred Schonnell Drive, St Lucia.

MACROBIOTIC

Sunflower Restaurant, 93 Stuart Street, Mullumbimby, NSW: Phillip and Vanessa are running a macrobiotic and hygienic restaurant reported to be "cheap and really good".

Sydney: Beggars' Banquet, Evans and Mansfield Street, Balmain. Still as cheap and good as ever.

The Macrobiotic Restaurant, 288 Oxford Street, Bondi Junction.

Melbourne: Shakahari, 329 Lygon Street, Carlton.

Adelaide: Annie's Kitchen (formerly Greg and Oli's), Main Road, Crafers (Adelaide Hills).

Environment

"People start pollution. People can help stop it." That's the message contained in **"72 things you can do to reduce pollution and improve your environment"**, a booklet issued by the New South Wales Department of Environment

Some extracts:

6. Don't burn leaves or rubbish. Better to start a compost heap and return the nutrients to the soil. Remove weeds in the lawn by hand rather than applying a herbicide. Assist your compost heap to do its work by adding a little urea from time to time.

7. Never burn plastic (polyvinylchloride) as this gives off corroding hydrochloric (muriatic) acid.

11. Use pesticides sparingly and only when necessary. Follow directions with great care. Keep containers out of the reach of children.

12. Empty containers and unwanted pesticides (insecticides, fungicides, herbicides, etc) can be serious hazards to people — particularly children, animals and plants. Safe disposal is vital.

In suburban areas, where very small quantities are involved, dilute the remains of unwanted pesticides with water and pour into a hole containing lime. (Packed oyster shells will do.) Do not empty the rinsings where they can be emptied into ponds or watercourses or where you want to plant trees or shrubs at a later date.

. . . In country areas where large quantities and containers are involved, consult the free pamphlet "Insecticides — How to Use Them Safely and Effectively", issued by the NSW Department of Agriculture. (Good on protecting bees from sprays, too. K.S.)

In NSW send a 7-cent stamp for the booklet to: Department of Environment, Box 4036, GPO, Sydney, NSW, 2001. Also available: **"Air Pollution and the Motor Vehicle"** and **"A Guide to Pollution Control"** (who to call to complain about pollution problems).

In other States, write to the Department of the Environment in your capital city.

ECOLOGY

Ecology Action, P.O. Box C159, Clarence Street, Sydney, N.S.W. 2000.

Environment Information Centre, Mrs. Jeanne Hill, 240 Rundle Street, Adelaide.

Friends of The Earth, C/- Universities of Adelaide and Melbourne.

Australian Conservation Foundation, 191 Royal Parade, Parkville, Victoria 3052. Write to them with your complaints about pollution, poison, pesticides and the misuse of national parks and gardens.

INSPECT:

Sydney: 45 A Beach Street, Coogee 2034.

Melbourne: P.O. Box 200, Clayton 3168.

Newcastle: Dr. D. Shortle, School of Education, University of Newcastle 2304.

Public Interest Research Units — at most universities.

SOIL TESTS

Mineral Fertilizers Pty Ltd, $7 per sample (14 elements and pH). Send stamp for sampling requirements to: Box 1, Pooraka, SA, 5095.

Australian Mineral Development Organization (Amdel), $12 analysis. Send stamp for sampling requirements to: Peter Bennett & Associates Pty Ltd, 152 King William Street, Hyde Park, SA, 5061.

Here's a list of bookshops which we have found are likely to have the type of books mentioned in EARTH GARDEN.

ADELAIDE

The Mothers Bookfarm, 1 Coromandel Place.

SYDNEY

Third World Bookshop, 20A Goulburn Street & Oxford Street, Darlinghurst.

Bray's Books, 268 Darling Street, Balmain.

The Ecology Shop, 189 Clarence Street, Sydney.

The Bookshelf 44 Willoughby Road, Crows Nest.

The Craftsman Bookshop, The Village, Kings Cross.

Anchor Books, Crystal Palace Arcade, George Street, Sydney.

MELBOURNE

The Source (Books from America), 4 Hothlyn House Arcade, Manchester Lane.

Readings, 388 Lygon Street, Carlton.

Space Age Books, 317 Swanston Street, City.

Soil & Health Publications, PO South Warrandyte, Victoria, 3134 (Books by post).

Bill's Bookshop, 84 Bridge Road, Richmond, Victoria, 3121. (No connection with Earth Garden.)

PERTH

Theosophical Society Bookshop, 1 Museum Street. Phone: 28 8104.

BRISBANE

The Red and The Black Bookshop, 21 Elizabeth Arcade.

Queensland Book Depot, 238 Montague Road, West End.

NEWSLETTER

The PEN (Pollution, Ecology, Nature) Newsletters are published monthly by the staff of Mineral Fertilizers Pty Ltd "to stimulate thinking on vital issues".

Those we have seen covered biological crop control, "To Spray or not to Spray", organic gardening notes.

Subscription for a year is $1.50, including postage. Address: PO Box 1, Pooraka, SA, 5095.

KEYLINE

If you're having trouble finding books on the Keyline system of water conservation, outlined in EARTH GARDEN No. 2, we suggest you contact the Third World Bookshops in Sydney and Melbourne.

They've got: Water for Every Farm, and The Challenge of Landscape (both hardbacks) for $2.95 each and The City Forest (paperback) at $1.95.

Ah, the gentle ass. We've seen them in Ireland, almost hidden by bundles of kindling wood three times their size, in Greece staggering along with tourists and their baggage, and in Afghanistan carrying panniers laden with melons and grapes (and sometimes veiled women).

We don't know when the first donkeys were brought to Australia, though we know they played an important part in our inland exploration and as pack animals in the gold rush.

We hope to research that aspect later. Meanwhile, we offer you one person's donkey tale, plus some sources to follow up if you are interested — books, magazines and studs.

"A horse understands and obeys, or does not understand and requires further training, but a donkey who knows perfectly well what is wanted will only do what he considers is needed."
ROBIN BORWICK, People with Long Ears

"And what is distance by land to the ass? Given not too cold a climate, and a little more time than the horse needs, no road is too long or too rough for him."
ANTHONY DENT, Donkey

THE GENTLE ASS

By Katherine Tyson

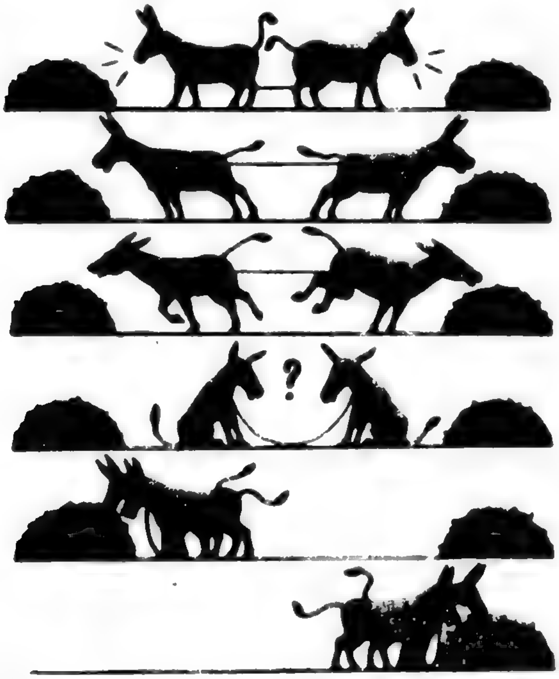
Consider a donkey?

Why not? If you have a farm, an acre or two or even just a very large garden, as well as a fondness for animals or "riding mad" small children, then a donkey would be a possibility.

Until recently in Australia, the donkey has been an object of derision and ridicule, even classified as vermin in Western Australia and generally regarded as far inferior to the horse.

But all this is changing with the formation of the Australian and New Zealand Donkey Breed Society which aims to foster the well-being of all donkeys, be they wild or domesticated.

Instead of being trucked from the outback to end up in tins of pet food, many donkeys are now sold to eager purchasers. In fact studs have been established based on nucleii of wild donkeys which, with patience and gentle handling, are easily tamed.



DONKEY SENSE, from THE COUNTRY BIZARRE.

Remember as with Homo Sapiens, Equus Asinus is also highly individual. However, most donkeys are quite happy to befriend a human being and to give him or her loyalty, service and affection. Unlike most horses, donkeys can be quite happy apart from other animals, centring their attention on their human family.

Four years ago, quite by chance, in a local gallery-cum-handicraft centre, I came across a "Bible" of donkey-keeping, "People With Long Ears" by Robin Borwick. Immediately I was captivated and began my long search which became a reality a year ago when we acquired Emma, a young chocolate-brown jenny.

A fact that had particularly impressed me was that donkeys could be kept in smaller areas and with less expense than horses. We have a small part of the garden, 70' x 60', fenced off as a home paddock and in it my husband has built a comfortable wooden stable on a concrete slab.

This is a very small area so Emma spends each morning tethered out on various close-by vacant building blocks.

Naturally she is welcome as she keeps the summer fire hazard down and provides free manure for the keen gardeners of the district.

We have to supplement her diet with hay and in the winter indulge her in a daily bucket of chaff mixed with bran. Hay costs between 30 and 50 cents a bale and Emma eats not more than ¾ of a bale per week.

Although the compost heap is now deprived of all apple peels, carrots, cake and bread scraps. Emma makes a good return with a daily average of 1½-2 buckets of manure. Hence a flourishing flower and vegetable garden.

When out to pasture donkeys prefer to browse rather than to consistently graze, and love coarse grasses, thistles, blackberries, native sags, twigs and even bark.

Our donkey really appreciates the garden clean-up in late autumn when she gobbles up prickly rose prunings, drying sweet corn plants, sunflowers, fallen leaves in fact anything as long as it is not laburnum or lupin seeds or yew, all of which are poisonous

Meat in any form must never be fed to donkeys as it is poison to vegetarian animals.

A farmer friend of ours has had all the blackberries on her farm eliminated by donkeys no need for expensive weedicides The thistle (all varieties including the prickly purple Scotch) are much sought after by the donkey.

The cynic who may wonder how much grass and clover his dairy or beef cows may be deprived of by the addition of a donkey to the herd, needn't worry. Most donkeys dislike clover and leave it alone as if by instinct — it can cause excessive excema and, according to vets, lead to an anti-coagulant condition of the blood.

Another advantage of a donkey on a farm or smallholding is that it will graze over grass sprung up from cow and sheep dung.

Most donkeys, when in groups, always deposit their droppings in one particular spot in the paddock — most convenient for collection purposes and, of course, less sour pasture. They are said to lose this habit if kept individually but Emma has always had one or two places where she makes her mound. Incidentally she never fouls her stable . . . the straw bed lasts for weeks.

I have read of farmers in Britain keeping donkeys to protect their sheep from marauding dogs, particularly at lambing time. Donkeys have an instinctive dislike of strange dogs and on several occasions I have seen Emma chase a stray round her paddock trying to beat it into the ground with her sharp hooves. In one case she managed to grasp the intruder in her teeth and shake it like an old rag. However with our own dog she tolerates the indignities of having her hooves sniffed and has never displayed viciousness.

Donkeys tend to be very protective of their home territory and will generally herald the arrival of a stranger with a loud and prolonged bray. The only times Emma has brayed at night have been when the local hooligans indulged in beery beach parties just across the road from her paddock and on another occasion when two neighbours, rather the worse for wear, tried to climb into the paddock to abduct Emma in order to tie her up in a local doctor's carport as a joke.

One bray and they tore their pants in their dash for the safety of the other side of the fence. Braying (a possible problem) is perhaps the only habit to which neighbours could object if indulged in too frequently. Here a gelding or a jenny is a much better bet than a jack who will constantly call for mates and probably try to break out, and what havoc he could cause if a few pony mares were nearby! Jacks tend to be rather randy and unless breeding is intended are best gelded. Besides being more affectionate, jennies and geldings are less noisy, although there are always loud exceptions.

Donkeys require plenty of human affection and company particularly if there is no other animal close-by. Like horses they require regular worming and, to be on the safe side, an anti-tetanus vaccination.

They are also fastidious drinkers and dislike stale water . . . in fact Emma drinks as the tap fills her bucket.

Neither should donkeys be kept in a boggy or waterlogged paddock. They loathe getting their feet wet and tend to be afraid of water lying on the ground. Speaking of feet . . . they require no shoeing . . . just an occasional hoof trim, making sure the wall of the hoof and the interior (frog) is not cut too severely. Their hooves are much smaller and more resilient than horses.'

Horses require a lengthy period of breaking-in and training. Not so with donkeys — they accept the bridle and bit, saddle and girth, without any fuss and bother. Sometimes a little driving in long reins helps to produce obedience in wilful animals. On the whole, the larger brown donkeys tend to be livelier than the greys.

Donkeys come in all shapes, sizes and colours. Colours vary, with greys with dark dorsal stripe, and cross and chocolate browns with oatmeal points predominating. Less numerous are the pure blacks, whites, roans, duns, and broken colours.

The donkeys' winter coats are thick and shaggy and when spring comes they rub and bite these off to reveal short shiny summer coats.

Australian donkeys tend to be larger than their English and Irish counterparts, eleven hands appearing to be the average here.

Emma is now twelve hands after being about 10.3 HH at one year, when she first came to us. As a mount she will last my children for years, being strong enough to carry me (9 stone) without any stress. As well she would be quite capable of pulling a cart and carrying laden panniers. In fact when Robin Borwick (responsible for the foundation of donkey studs and the popularity of the donkey in England) moved to Malta he took his favourite breeding jack and used him to pull a plough when establishing his large garden. Another possibility!

ABOVE: Author KATHERINE TYSON mounted on EMMA. BELOW: EMMA "helps" husband BRUCE collect firewood.

Should this account have whetted the appetite of potential donkey owners then more details of the whereabouts of the nearest studs, current prices and care of the animals are available from: The Hon Secretary, Australian and New Zealand Donkey Breed Society, Mrs Denise Moorhouse, 84 Pine Road, Mooroolbark, Vic 3138.

As well, the Society publishes a quarterly magazine "Donkey Digest" available at 50 cents per copy or $2 a year from 8 Chalmers Lane, Devonport, Tasmania 7310.

Tales of Donkeys

People with Long Ears, Robin Borwick, Cassell, London 1965, 180 pp.

Writing in a chatty, humorous style, Robin Borwick discusses buying and keeping donkeys, drawing on his experiences as the owner of a donkey stud.

In 1965, when this book was written, donkeys were fast becoming a kind of "status symbol" in Britain and the bulk of stock was being imported from Ireland to satisfy a new demand.

An excellent guide for the donkey owner, covering breeding, buying an animal, points of the donkey, training, feeding and foaling.

The Irish Donkey, Averil Swinfen, Mercier Press, Cork, 1965, 113 pp.

Donkeys are so often linked with Ireland that it's hard to believe that they are not natives of that green and pleasant island. In fact they were unknown there until after the Middle Ages and few written references are made to them before the 18th Century.

Donkeys readily adapted, working well in the rocks and bogs where horses were useless.

Circus folk and tinkers used them as performers and workers. They drew passenger carts and loads of seaweed.

It wasn't long before the Irish discovered the benefits of donkey manure for potatoes.

In her book (Lady) Averil Swinfen, traces the history of the donkey, with an emphasis on Ireland. She mixes lively anecdotes, references to older books and authors, myths, blarney and folklore with her own experiences as a donkey breeder.

This book, which also has a number of endearing photos, should appeal to all those with a soft spot for donkeys or for the Irish.

Donkey, The Story Of The Ass From East To West, Anthony Dent, George G. Harrap & Co. Ltd., 175 pp.

The story of the donkey begins long before horses were used by man before the invention of the wheel when donkeys were first tamed.

It continues along the mountain tracks trodden by nomadic tribesmen, the caravans of the Silk Road, columns of troops marching to battle, the busy market streets of the costermongers and the beasts of burden in forest tracks and quiet country lanes.

Anthony Dent traces the donkey with each dainty step of the animal's delicate feet, and tells the story very well.

The word, donkey, he points out, is a relatively recent name, first written in English in 1785, though it probably existed in everyday speech long before.

Before that the gentle beast known as Equus Asinus to the zoologist was referred to in English as the ass. The name appears to have stemmed from the Semetic anah and through the Greek anos, Latin asinus, French ane, Gaelic asal and German Esol.

The publishers claim Anthony Dent's book "the complete story of the donkey". So it is, but from a purely historical and narrative aspect. There are no hints or practical advice for the owner, just a fascinating story (and beautiful illustrations) for those interested in the antiquity of the ass.

Donkeys, A Practical Guide to their Management, M. R. de Wesselow, Centaur Press, 1967, 144 pp.

The modern donkey handbook.

It begins with the type of donkey to buy sex, age, size and the many colours. Then come details on how best to care for, groom, feed and shelter your pet.

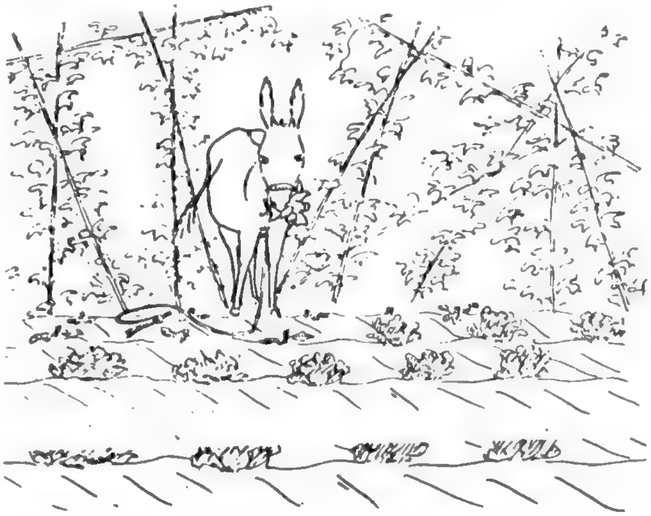
Donkeys need shelter and the author almost builds one for you, with a guide to size, materials and tools needed to do a good job.

There are chapters on shelter and bedding, pitfalls, the obstinate donkey, ailments, the mind of a donkey, riding, donkey traps and a detailed section on foaling and care of foals.

All this is made more delightful by the almost whimsical style and the definitely whimsical drawings, and tips like how to pin an eiderdown nappy-style on a foal.

The final paragraph in the book sums up her attitude to donkeys in a characteristic way:

"You may never quite know which of you has the upper hand, but although his mind is his own, he is patient, kind and not too demanding. So after all who cares?"



STUDS

Stony Ridge Donkey Stud, Peter and Jean Coffey, Valley Road, Wattle Glen, Victoria 3096. Telephone: 438 1795.

Keysoe Donkey Stud, Mrs. Ann Walker, Preston, Tasmania.

Bush Echoes Donkey Stud, Mr. and Mrs. C. Russell, Pound Lane, Narre Warren, Victoria 3805. Donkeys available for hire for fetes and garden parties.

Hillgrove Donkey Stud, C/- 84 Pine Road, Mooroolbark, Victoria 3138.

Donkey Digest, magazine of the Australian & New Zealand Donkey Breed Society, quarterly. Subscription $2.00 a year or 50 cents a copy from: 8 Chalmers Lane, Devonport, Tasmania 7310.

As soon as you see the appealing profile of a donkey, drawn by artist Hugh Davenport, on its cover you realize Donkey Digest is something special.

It is special because it is the Australian donkey magazine and the one you will need if you own a donkey or want one in the future.

The Australian and New Zealand Donkey Breed Society was founded on May 30, 1972, with its primary object being the well-being of all donkeys in Australia, "be they domesticated or wild".

The magazine's editor is Ann Walker, of the eysoe Donkey Stud at Preston, Tasmania, who is a driving force behind the upsurge of interest in donkey breeding in Australia.

The assistant editor, Katherine Tyson, who lives in Devonport, Tasmania, has written an excellent article for us this issue.

Contents of Donkey Digest include a regular editorial, "Around The Studs", some advice from a veterinary surgeon, "14 hands and under" a page for younger enthusiasts, book reviews, poems and hints on donkey care.

We found the personal accounts by owners on how they found their donkeys, and the idiosyncracies, obstinacy, playfulness, tricks and lovableness of their pets was something else that is special about the magazine.

Assile, magazine of the Irish Donkey Society, Hon. Secretary, John Heber-Percy, Avalon, Bellean, Nenagh, County Tipperary, Eire.

The Irish Donkey Society was formed in September 1970 at a meeting at Limerick. The impetus for that meeting came from Lady Averil Swinfen, author of The Irish Donkey, who is now both President of the Society and the editor of Assile.

She took the title, Assile, from the Irish name used for the Ass in Zoologia Medicinalis Hibernica, published in Dublin by John K'eogh in 1739.

This first issue of the magazine was for spring 1972 and the second issue should be ready as EARTH GARDEN goes to press. The Lady Swinfen tells us it will have news about the entry of donkeys for the first time in the famous Dublin Horse Show.

Assile 1 contains articles on the conformation of donkeys (for show purposes), "Dalesman" of Horse and Hound writing on childhood memories of donkeys at fairs, the question of parrot-mouth in donkeys, a vet's notes on worms, Lucy and her foal, the Poitou mule, editorials and reports, some good poems and letters (one is in Gaelic) and even a piece on that heroic Anzac, Simpson and his famous donkey. Some beautiful photographs and plenty of information.

We suggest you send the sterling or $U.S. equivalent of $1.00 if you would like a sample copy of Assile, or the other overseas magazines listed below.

The Donkey Breed Society Magazine, British Donkey Breed Society, Prouts Farm, Hawkley, Nr. Liss, Hants-England.

This is the official magazine of the British Donkey Society, published twice yearly. Write to the Secretary.

Mr. Long Ears, A.D.M.S.Rt.5, Box 65, Denton, Texas, U.S.A.

The magazine of the American Donkey and Mule Society. Packed with informative articles for the donkey and mule lover. Write to the Editor.

SHELTER

Further thoughts on simple do-it-yourself dwellings:

by Gladney Oakley

I don't think of a dwelling/house as a whole. I think of three parts — the roof, the walls (whether internal or external) and the floor.

Floors: As we lose direct earth/rock contact when we live on raised wooden platforms (or wear shoes), I've been trying to work out a dust-free hard earthern floor.

I've just heard that a slurry made from a mixture of powdered termite mound and water will set very hard. Someone told me that primitive natives somewhere (New Guinea? Indonesia? Main Arm?) have been crushing termite mounds, mixing the dirt with water in concrete mixers, and then pouring very successful floors.

Perhaps more important than a specific technical solution to the floor itself is the notion that the floor is an entity itself, and need not be rigidly the same shape and size as the roof.

Roofs: The problem here is the destructive effect of sun/air/rain. Plastics, paints, galvanised iron, wood, all succumb.

Still, there remain many interesting solutions. Here is one:

Make a wooden roof in the form of a shallow box, open to the sky, with a depth of say three to six inches. Paint the inside/topside of this box/roof with an inexpensive epoxy-tar paint, so that the box is now watertight, that is, it can be flooded, and will be flooded by the next rain, and will hold water and will not leak.

Now a hole should be made in the edge somewhere so that all of the water will drain out. Now fill the box/roof with good topsoil and plant a garden in it.

The rain/air/sun are harmlessly absorbed by the plants and soil. The plants and soil protect the epoxy-tar paint from the weather. The rain soaks into the soil, and then drains out the hole (holes maybe) provided.

The wood is protected from water by the epoxy-tar. Don't forget to provide access to the roof for your goat.

Walls: A thick wall of native shrubs.
A banana crate wall.
Sliding doors.
Bamboo.

wizard domekit

Meet the Wizards of Canberra! Russ and Les conjure up geodesic domes. Rosalind keeps it together by feeding people, haggling with ripoff merchants and writing letters.

Russ, Les and Rosalind collectively are Wizard Enterprises, which builds domes, specifically domekits and hothouse domes. Wizard's motto is: "Growing Structures".

They've found that a geodesic hothouse, because of its facets, acts as a heat and light trap. Everything grows.

As skinning requirements vary, the Wizards have designed a dome frame that can be erected in a couple of hours with a spanner and whatever people-power is available.

The Wizard domekit:

2 frequency, 7-9ft radius, ½ sphere.

Floor space (to nearest 10 sq ft) 7ft — 150 sq ft, 8ft — 200 sq ft, 9ft — 250 sq ft.

Struts — 2 x 1in hardwood.

Hubs — ½in marine ply.

Bolts — 3 x ¼in galvanised.

"We've stress-tested this framework with half a ton of people," reports Rosalind. "Theoretically, it will take three tons. It's suitable for hothouses or temporary dwellings.

"If 2 x 2in struts are substituted, it is suitable as a home dome, although the size indicates that its best use would be as one of several in a dome complex."

Wizard will freight the kit anywhere within NSW and Victoria, complete with instructions (but not spanner). Prices:

2 frequency, ½ sphere, 2 x 1in struts — $100.

2 frequency, ½ sphere, 2 x 2in struts — $180.

They also make a 3 frequency, 10-15ft radius, ⅝ sphere, with 2 x 2in hardwood struts, ¾in marine ply hubs and 3 x ⅜in galvanised bolts. Price $300.

Rail freight to other States would add a bit to the cost.

For more details, send a 7-cent stamp to: **Wizard Enterprises — Growing Structures — Box 158, Kingston, ACT, 2604.**

Here's some tips on building from the Wizards:

Materials — Whenever possible go to the source. It's worth the petrol money. For example, the lumber yard will quote about $50 per 100 super feet for 2 x 1in timber. A drive to the country and the nearest timber mill will get you the same for about $15 to $20 per 100 super feet.

Take half a dozen sacks with you — sawdust is great for compost or mulch and, unless you shovel it up for your garden, the mill has to burn it.

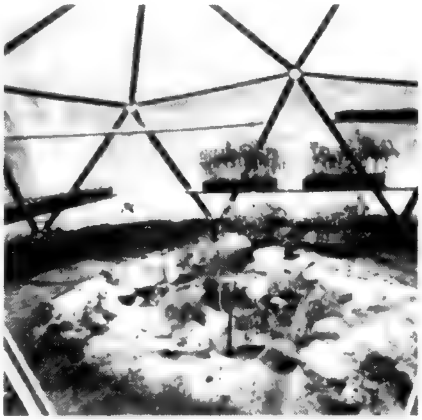
If you're building a dome with metal hubs, such as the one in EG3 — the strapping tool and SS straps and buckles for attaching hubs to struts are available from Westons in Sydney. Tool is $26.50, strapping $11.50 per 100ft, buckles $14.95 per 100. All go under the trade name Band-it.

Hothouse skins — We built ours with Sarlon shade cloth and .008" plastic film. Sarlon is expensive (it looks beautiful) and $57 per 100 feet from the manufacturer. We figured after finishing that a less expensive way of providing shade would be to substitute black plastic for clear in some of the panels.

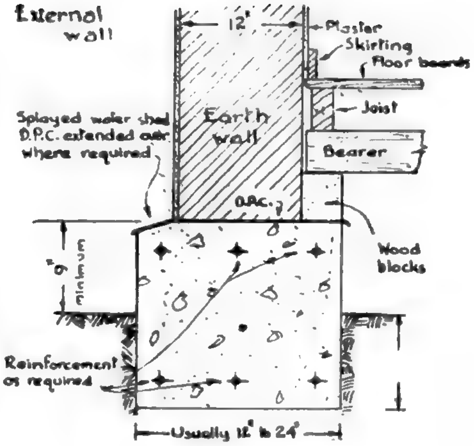
Plastic is about $25 to $30 per hundred yards and as long as you get UV stabilised should last one to two years, depending on weather conditions.

Plastics in Australia are hopelessly expensive/overpriced.

By the way, the hothouse is a perfect place in which to leaven bread.



INSIDE the WIZARD hothouse.



STRIP FOOTING

Earth-Wall Construction, Pise or Rammed Earth/Adobe or Puddled Earth/Stabilized Earth, G. F. Middleton, Commonwealth Experimental Building Station, Sydney, 1952, Bulletin No 5, 46 pp.

About one-fifth of the world's present buildings have been made with walls of earth.

This booklet, based on experimental work carried out at Rydalmere in Sydney, takes a practical look at earth-wall construction, with enough detail to build a house of adobe, pise or stabilized earth.

Extract: "The wattle-and-daub system was used to build the very first houses in Australia . . .

"The old method began with the construction of a sturdy frame of bush timbers, sometimes used in their natural state, sometimes roughly squared. For a small cottage or building of similar size, the corner posts were usually about 8in in diameter, and the intermediate posts or studs usually from 4 to 6in in diameter.

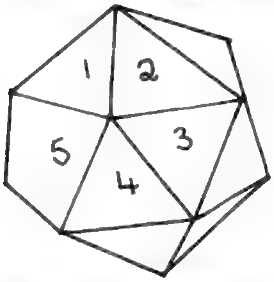
"Next, thin, straight withes or saplings were interlaced with twigs or branches, to make matlike screens called 'wattles'. These wattles were attached to the posts and studs, as both exterior cladding and interior lining, and the spaces between the exterior and interior wattles filled with mud and straw. The interior and exterior surfaces were then 'daubed' (plastered) with mud, and invariably finished with whitewash."

Available from: Department of Works, Commonwealth Experimental Building Station, PO Box 30, Chatswood, NSW 2067. Price 50 cents. Post free.

Geodesic domes are the invention of American polymath R. Buckminster Fuller.

Geodesic (noun): the shortest distance between two points on a mathematically derived surface.

Domes based on the geodesic principle can be made into many different shapes. One of the most simple is based on an icosahedron, a figure made up of 20 equilateral (equal sided) triangles, with 5 triangles around each vertex (tip).



If this figure is enlarged each of its triangles would become too bulky and heavy to use as the basis of a dome. So it is subdivided. Two divisions along the edge is known as two-frequency, three divisions, three-frequency etc.

Each line in the newly-formed triangle will be a strut.

Domebook 2 is an instruction manual you need if you are at all interested in domes. From it you will learn enough of the necessary maths to understand the theory of domes and why "the spaces soar".

After that you will easily follow the practical advice on building all sorts of domes — sun domes, pods, shakedomes, ferro-cement, zomes and eggs like the one illustrated. Any questions you have will be answered by the mass of photos, diagrams and personal feedback from scores of domebuilders.

There's also the storybook aspect — a sense of sharing a unique experience which comes over from domebuilders and dwellers describing their hassles with sealants and caulking, how they built their doors and windows and didn't quite keep the rain out.

Extract: "These nonspherical domes happened because the platform built was too small (16ft) for a spherical dome. With an 8' radius the dome would have curved in too fast. So I started stretching and distorting the structure to fit the situation.

"You can stretch the sphere into any proportions desirable; I used the golden section which is one of those majic (sic) ratios which seem to happen everywhere.

"It is the ratio that you divide a guitar string into when you play a fifth (which is the most harmonic note), it is the ratio that your belly button divides your body into, the ratio that your nose divides your face into, the ratio that a star pentagon cuts itself into, is that proportion of lengths such that the shorter piece is as to the longer as the longer piece is to the whole (the sum of the shorter and longer pieces)." — Peter Calthorpe.

Domebook 2, Pacific Domes, Bolinas, California, 1972, 3rd edition (updated and corrected), 128 pp, about $4 60.

the spaces soar

EGG DOME: A 3-frequency alternate, stretched, with circular floor.

feedback

Some feedback on "building with brick" (EG3) from Mick McKeown, of Storeys Creek, Tasmania:

"Shelter" builders should know that in building a shelter with square corners a greater area will be under cover if a square building is constructed rather than a rectangular one.

For example, Peter and Diane built a 34' x 16' cottage which would have an area under cover of 544 square feet. If they had built a 25' x 25' cottage, the area under cover would be 625 square feet — an increase of nearly 15 per cent.

The number of bricks used, however, would have been the same.

Illustrated Handbook of Vernacular Architecture, R. W. Brunskill, Faber & Faber, 1970, 230 pp.

The author looks at the old country buildings of Britain, analysing them through the eyes of an architect. All about stone, cobbles, pebbles, flint, timber, wattle and daub, thatch, slate, stables, barns, houses and where to see them in Britain.

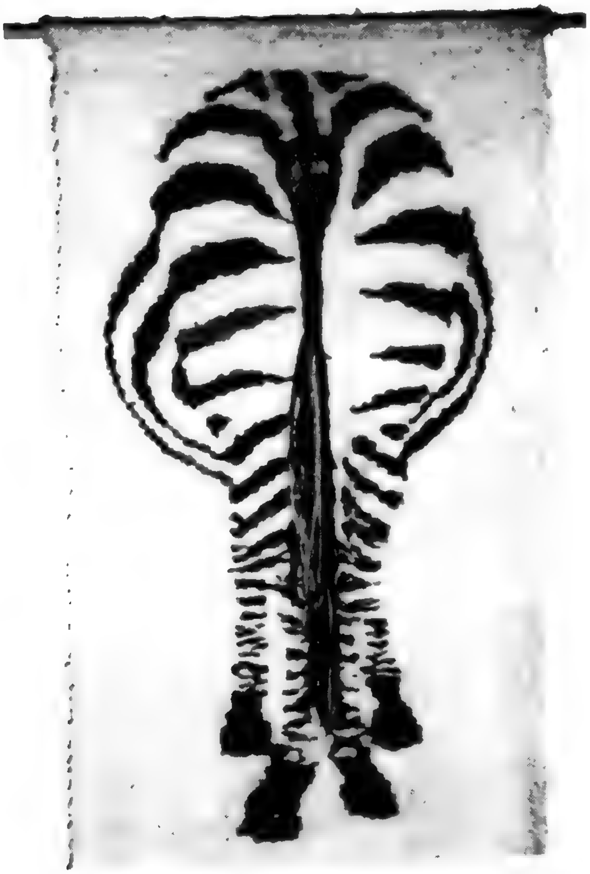
Shelter & Society, ed Paul Oliver, 164 pp, numerous photos. Try the library.

This is an inspirational book you should read before planning a dome or a mud-brick building. It covers a wide area of folk architecture including Bernese houses, the walled buildings of Damascus and the intricate Hausa mud cities of northern Nigeria.

A very good section by Australian Amos Rapaport deals with hogans and pueblos. The chapter on Drop City's domes built from scrounged trash is less practical, but the photos are instructional where the text lacks help.

Weave your own wall hanging

Weaving is the same principle as darning a sock. One set of threads runs lengthways (the warp), crossed by threads running crosswise (the weft).
On a loom the warp threads are stretched taut.



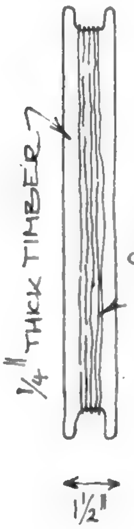
By Hans Dorbecker

The pictured wall hanging resembling a zebra is about 4 feet wide and 6 feet high. It took me one week to weave and cost me about $3.00.

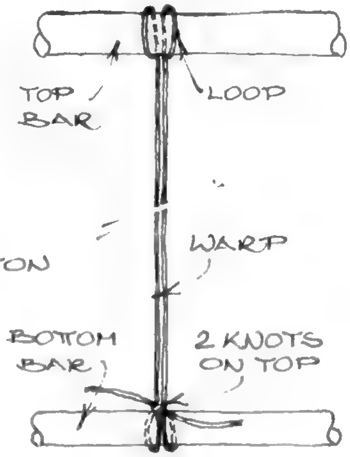
This particular one is done with handspun wool, but if you haven't got a spinning wheel, you could also do it with unspun raw wool. You don't need any expensive equipment to make the wall hanging, as it is done without a loom.

All you need to do something similar is two 1 inch-round bars (or two straight tree branches), 4 feet long, about 3 ounces of cotton thread or similar for the warp, about 4lb raw wool in two or more shades, another 3 or 4 ounces of cotton thread for the weft and a shuttle, made

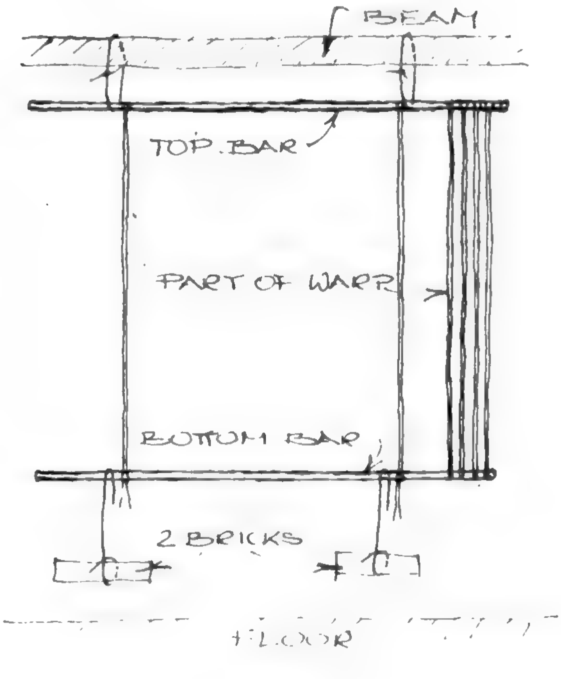
DRAWING 1:
SHUTTLE.



DRAWING 2:
KNOTS



DRAWING 3:



from smooth flat timber (see drawing 1). If you use handspun wool you do not need the weft cotton.

To start your wall hanging, hang one of the bars or branches, at a height of about 7 feet, from a ceiling beam inside the house, on the verandah, or outside from a strong tree branch.

The next step is to cut your cotton for the warp. Cut lengths of 13 feet, which will leave one foot over at the knot ends. Each length will go around the frame from bottom to top and back again.

If the spacing between each warp thread is half an inch you will need a total of 96 warp ends, each 13 feet long.

Take two threads and knot them on the top bar about a foot from its end on each side (as in drawing 2). Knot the second bar in 6 feet below and parallel to the top bar.

Now take two bricks or stones with similar weight and tie them to the lower bar about a foot from the end. (Drawing 3).

Tying the remaining warp threads is the rather boring and time-consuming work which follows next. Nevertheless it should be done most carefully, and it is very important to tie each thread with the same tension, and the same distance apart.

Now you can start the creative part: work out a picture or pattern on a piece of paper. Don't design anything too detailed, because it wouldn't be possible to weave it with a wide warp spacing of half an inch.

Enlarge your design on a piece of strong paper, for example brown wrapping paper, to the size of your wall hanging. Pin this full-size design on to the top bar. Let it hang down behind the warp threads with the design facing the warp, and fix it with sticky tape to the bottom bar.

You don't need to enlarge and pin up your design if you are sufficiently confident of your artistic ability to reproduce it.

Now wind about 20 feet of cotton around the shuttle, weaving with it so that there is always one warp thread in front and the next behind the shuttle. Do this close to the bottom rail, pushing the weft thread down to the rail with a fork or stick.

Then push it through from the other side, leaving each thread which before was behind the shuttle in front of it and vice versa. Continue this until the thread on the shuttle is used up. Let the end just hang down at the back.

Be careful not to pull the warp inside to the middle. It is better to leave a loose loop at the turn of the weft!

Now take a handful of raw wool and pull it apart several times to make it fluffy. Remove all burrs and vegetable matter. Pull the wool apart into a roll, twist the end, and weave it through the warp just as you did the cotton.

This inserted wool should not be thicker than half an inch and not vary too much in thickness. Push the wool down onto the previously woven cotton. Follow with three to four rows of cotton thread on top of the wool.

Continue this rhythm until your design starts — in the case of my design the feet of the zebra. Where you want a change of colour, just insert dark wool instead of the white.

If you're using handspun wool you don't need the cotton in between, because it is strong enough to hold it all together. The raw wool alone cannot do this.

The more you push the wool together, the stronger and more durable the finished wall hanging will be.

When you finally reach the top row, you only have to remove the bricks, and, if you like, the bottom bar, by cutting off the knots and tying the warp ends back on to the first rows of cotton with two knots.

If the wool you used was dirty, or if your hanging gets dusty after a few years, you can clean it this way: Lay it flat on a clean surface (verandah or lawn), wet it with the garden hose and sprinkle some washing powder over it. Leave it for half an hour, then hose it down until the water runs clear (or wait for some rain to do the job for you).

Never wet it when hanging or the wool sags down. Let it dry flat on the floor. Brush gently with a hair brush when dry to make it fluffy again.

In the same way you can also weave clothing like ponchos, scarves and skirts, and bedspreads and floor rugs.

Should you have any questions, or trouble with your creation, ask Hans Dorbecker at The Shearin' Shed, 483 Crown Street, Surry Hills, Sydney. Telephone 69 7761.

GOOD LUCK.

NEW SCHOOL OF HEALTH

The Alternative Health Centre has incorporated its activities into the Institute of Natural Health at 23 Collins Street, Surry Hills, Sydney, NSW, 2010.

The institute offers afternoon and evening classes in various 'natural' subjects. Most of the lectures are one hour long and run for a series of ten weeks. Cost differs for the different topics, but the majority seem to be $2 per session.

Included in the schedule for 1973 are series on meditation, natural childbirth, massage, dream awareness, yoga and herbal lore. There will also be a series on Organic farming and gardening. The programme says:

"A special introductory course for those thinking about cultivating land in the city, in backyards, vacant lots or playgrounds, and for those in the country! It covers land formation, the use of natural resources such as water, composting, companion planting and the basic principles of Biodynamics. What to plant, how and when. Protection of plants and flowers without the use of poisonous sprays and insecticides. Treat the soil as a friend, as part of the natural environment, and be rewarded.

Practical demonstrations and field trips will also be arranged.

Sounds good.

For further information or a course programme, send a seven cent stamp.

dung beetles

Only a small minority of Australia's native dung beetles are able to recycle the dung of our introduced domestic animals, writes Stephen Murphy, of Mooroolbark, Victoria.

"Dung beetles are handy bugs," Stephen says. "They recycle nutrients locked in the dung pad that would otherwise be lost in the atmosphere. They do this by burying and dispersing the dung pad as a part of their reproductive activities.

"In turn this burying activity lowers the reproductive rates of bushflies and parasitic flies (that may spread diseases such as Buffalo fly in northern states).

"The dung beetles actually increase the area of ground available for pasture growth by their burying activities. Anyone who has seen some of the paddocks drowning in dung knows what I mean."

Stephen says that the Department of Entomology (study of insects) of the CSIRO in Canberra may be able to help EG readers with further details, and possibly even some dung beetles imported from South Africa.

If interested, you should provide accurate location, soil type, texture and climatic conditions (average rainfall and temperature) which would help the researchers to select the right species for the conditions.

save water

"This is for people who use pure soap powder and don't want to use water softeners," writes Margaret Gardner, of Beaumaris, Victoria.

"It also saves water," she continues. Here's Margaret's hint:

"If you add a small cup of vinegar to the first rinse of your washing, the soap comes out of the clothes and they need less rinsing."

We hear that many of you are being eaten out of house and home by plagues of locusts and grasshoppers. This situation probably justifies the use of that vicious nicotine spray outlined in EG2. We know it will kill grasshoppers, along with any beneficial insects in the area treated.

As a normal safeguard, try to attract birds to your garden. They'll eat 'em. Praying mantids are grasshopper predators and can be collected from swampy areas and introduced into your garden.

Sprays made from mashed-up tomato leaves and hot peppers are credited as hopper killers, and will also deal with aphis and flies.

Chickens and other poultry find them juicy also. One method is to move a portable coop from place to place in the garden, which will benefit from their manure.

stinking roger

It is the African marigold (Tagetes) which helps in keeping nematodes under control. Stinking roger (Tagetes minuta) is what the HDRA is using in their research, writes Jeanne Russell, of Holland Park, Queensland.

"However, it is the English marigold (calendula officinalis) whose flower petals can be used in salads, soups, stews — it also can be made into an ointment, especially good for preventing scar tissue.

"Made into a tea, it can help to bring out bruises after an accident or fall, and perhaps prevent complications. It is a poor man's saffron!

"The dandelion is a powerful little plant, too," adds Jeanne.

more letters

Dear Keith and Irene,

A regular bread maker myself, I look forward to your next article on the subject. I remember too well my first efforts in this field — since I produced an excellent, if expensive, alternative to pise and adobe mud bricks!

Best wishes, Mike Manser, Geelong, Victoria.

* * *

Dear Earth Garden,

Land prices are our concern. Small acreages in short supply and bringing premium prices. Joan and I and our five children have toured the eastern states since arriving from Canada in September.

We had 20 acres once and no money. Then we had some money and no land. Now, after four months, we still don't have any land and the money is frittering away.

Communes and group living situations make us nervous, but how about a land purchase company? Just down the road from here, there's 900 acres selling for $18,000. With a mile-and-a-half river frontage, and several creeks, the property has potential to support many people.

For $20 an acre it's a good deal. Unfortunately, you can't buy it at $20 an acre. It's $18,000 for 900 acres. Who needs 900 acres? Maybe nine couples or so.

Peace and love, Peter and Joan Geddes., Thora, NSW 2492.

It's a pertinent question alright, Peter and Joan. We hope those interested will write to you direct. We hope to have something on the legal aspects of company-type land buying in the future, too. Good luck!

* * *

Dear Garden,

We have 156 acres of virgin land near Macksville, NSW. The soil is very rich and the land is ideal for setting up a self-sufficient community of separate families.

We are looking for one or two more families that wish to be "land poets".

The way we wish to work is with a group of 3 or 4 families living in their own houses with their own gardens and chooks, but working as a community on the larger projects.

Suitable parties would need at least $3,000 for land, legal expenses, some sort of shelter, tools and so on.

Anyone interested please contact us at PO Scotts Head, NSW 2447.

Best of luck, Phyll and Jerey Bradley.

Dear friends,

My wife, Christine, and I, are part of a group comprising 15 adults and four children (with another two expected shortly). We are all from Melbourne and have travelled over 1,000 miles to the north-eastern corner of NSW.

We have been here since early December and are actively checking out land, weather and soil conditions and general suitability of the area for establishing an alternative community. We aim to buy lush virgin bush and there live a "natural lifestyle".

We are vegetarians and have already started organic gardening and experimenting with various mulches, composts and organic sprays. Organically-grown produce, arts and crafts, will provide income for the group when we are on the land.

Communal co-operation will be necessary, to buy land, establish a settlement and workable craft industries. We would hope that a social order founded on co-operation and love of one's brothers will emerge. If you can see yourself fitting into a scene like this, remembering it is still a nascent plan, please feel free to contact us.

If you can give any information, advice or help, it would be greatly appreciated.

Leon Bronson, 72 Coronation Avenue, Glen Innes, NSW 2370.

* * *

Dear Keith and Irene,

Never in my entire life of 29 years have I ever read any book, paperback, magazine or any periodical in its entire length until I read EARTH GARDEN, which I heard about on the ABC Melbourne.

If ever I needed to know or try to understand anything, I could only read the article in which I was interested. Obviously, EG hit the spot, because I was bloody wrapped from cover to cover. The information and interviews are in down-to-earth, simple, but informative language and it was a pleasure to read it.

Having been interested in gardens for about 13 years and having grown orchids for about nine years, I have gained enough knowledge about growing things to write on a pumpkin seed. So I wrote to the Agricultural Department and asked for a book suggestion on compost making and growing vegetables.

These books would have come to a total of $19. I take it they would have been pretty heavy reading, so I think that with 19 copies of EG I will gain much more.

An old organic gardener from way-back, whose house my wife and I are minding, claims that the use of lime will drive out the worms. He never will use it and his vegie plot is lousy with worms which you have to beat back with a shovel at times. He also goes overboard when he sees any spiders or centipedes or even ladybirds, which he claims get stuck into the little garden beasts.

When he plants potatoes he uses a well-drained trench which runs north and south. As the potatoes grow, he fills in the trench around the plant until it has the normal appearance of a garden bed. This, he claims, improves the yield of spuds.

On reading EG3, I was surprised to read the canning Mr Brownpaper gave your publication. I believe that the $1 charge is well worth it because of the information that EG holds. So keep it simple, keep it plain and keep the bulldust out.

Thank you, Ken Hanson, Burwood, Victoria.

* * *

Dear Irene and Keith,

When in Sydney just before Christmas, I found No. 3 of your EARTH GARDEN at the Natural Health Society's rooms at 131 York Street. Later, at Bloom's shop, I found the first two issues.

I want to congratulate you on your enterprise and wish you good luck for future productions. I am convinced that with our nation's steady decline in physical, mental and spiritual health, a massive return to the land and re-education of our young people (particularly) in the rules of natural health, which should be every man's birthright, and such a complete change in sense of true values, is our main hope of survival with improvement.

I preach similar things to my patients and find the "gospel" is slowly being accepted by many previous scoffers. But, to improve the physical health, return to better farming and horticulture alone is not enough. We badly need widespread teachings of the simple rules of food preparation and use.

Most of the daily food should undoubtedly consist of raw fruits, nuts and greens; the less animal protein — the better. I am convinced that eventually we must become vegetarians; but not vegetarianism as so widely practised by so many. I have found that many "vegetarians" are far more sick than the meat eaters. I think this is because they mostly eat far too much "grain" food and too many so-called "protein" substitutes. Why, if meat is not essential, is it thought necessary to eat meat "substitutes"?

So carry on the good work. It may be hard without revenue from advertisements; but that is where so many of the present "health" journals fall down. They hate to condemn anything which contributes to their (material) support!

Best wishes for 1973.

Yours sincerely, Dr Eva Hill, Hamilton, New Zealand.

The Flower Patch is a gentle English magazine, full of country scenes and memories and whimsical stories of old-time writers, orators and preachers.

Anne and David Lazell named their little (usually about 20 octo pages) journal after the country home owned by Flora Klickmann. Flora who? Well, Flora Klickmann was the famous editor of Britain's "The Girls Own Paper" between 1908 and 1931, and author of many books typical of that period.

Anne also handles by mail the sale of books from prewar days, dealing with country interests, memories and early radio broadcasters. "Though we are often loth to part with the gentle and interesting books creaking on our landing, we do quite a lot in this direction," David wrote in a recent letter to EARTH GARDEN.

We particularly liked the recent investigation into the identity of "Mary" in the "Mary had a little lamb" nursery rhyme, billed as "Another scoop for the Flower Patch."

The stories and old prints are delightful, if occasionally trivial. (But that is part of their charm!) They would be ideal for taking your mind off the tedious daily tasks and transporting it to a simpler and more genuine era.

If you would like to join the "Flower Patchers", send in your subscription, $3.00 for the six yearly issues, to: Anne and David Lazell, 127 Tower Road South, Warmley, Bristol BS15 5BT, England.

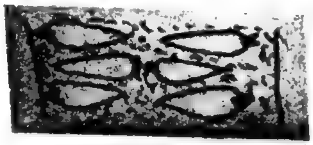
Anne and David also produce beautiful letterheads and some tape casettes of Flower Patch stories.

Use Sawdust

Sawdust has many uses.

Snails hate it and will only cross it when desperate. It's better than bought snail baits, as it can be used with safety around kids and dogs.

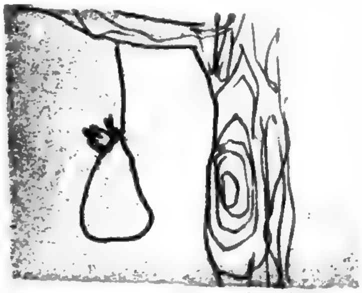
Store your glut of harvested carrots in it until you're ready to use them.



Clean grubby hands with it.

For a happy kitten use it in the dirt tray and save yourself a fortune.

Fill a sack and hang it from a tree. Encourage your kids to punch, whack and bang it. At worst you'll produce a Lionel Rose, at least you'll free a few tensions. Whack it and see.

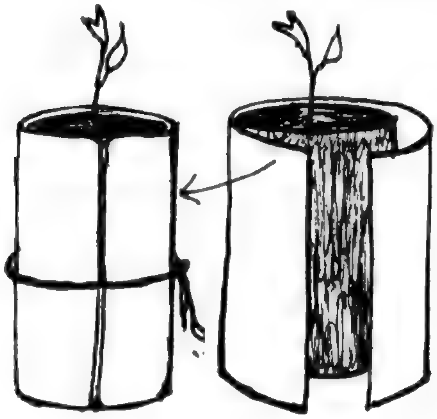


Sawdust can be used to stuff toys, preferably the "sitting" type rather than those to be much used and abused.

Finally we all know that sawdust serves as a fine mulch and breaks down quickly providing it is well rotted before being put on the garden. Some people advocate mixing it with blood and bone.

Most important of all sawdust is free for the asking. (See you at the timber mill.)

From Lee, of Yarrawonga, Victoria.



Use old tins to propagate seedlings. Open the cans top and bottom, cut them up one side and tie with string. Fill with potting soil and plant your seeds.

When transplanting, simply undo the string. The roots are not disturbed and your plant suffers no setback.

Friends who gave us this tip were using baler twine, given them by a farmer, to tie up the cans. They also cut up aluminium drink cans to make tags to identify their plants.

Some more recycling sense with tins: Here a hose watering a row of plants is placed in a tin. This stops a considerable amount of soil erosion as you'll see if you try it.

more letters

The great debate goes on. Here's a few letters we've received on the virtues of veganism, vegetarianism and healthy eating.

Dear Irene & Keith,

I found **EARTH GARDEN No. 2** quite interesting, especially the interview with Neil Douglas.

Regarding your page 40 bit about vitamins, you say that the essential vitamin, vitamin B12, is missing in the diet of vegans and many vegetarians as it is found in large quantities in liver and kidneys, and in small quantities in eggs and cheese.

I am a complete vegetarian, "vegan", if you like, myself, and have been so now for about 6 years. I had to study up on this vitamin B12, to make sure I would get enough on a vegan diet.

I found that I could get plenty of vitamin B12 by eating an edible type of bacteria, which was commercially available in a dry powder form. A match-head sized heap of this powder provided one's B12 requirements with a safety factor of several fold, and cost only one hundreth of a cent (per day)! The powder needed no refrigeration or other special storage conditions.

Vitamin B12, alias cobalamin, alias "animal-protein-factor", is doubtless missing in the diet of many vegans, because few, if any, vegans know that B12 is found in extremely high concentrations in certain bacteria and moulds, some of which are safe and pleasant to eat.

And bacteria and moulds are both members of the "Plant Kingdom". They are "lower plants" to be exact — as also are mushrooms and yeast. Any good biology book will show bacteria and moulds are part of the Plant Kingdom, rather than the Animal Kingdom.

Thus a vegan who gets his B12-needs by eating B12-rich bacteria is NOT eating an animal product — provided the bacteria are grown in a medium wholly consisting of vegetable materials, eg unrefined sugar syrup, precooked soy flour, plus a pinch of cobalt salts. Cobalt is the central atom of vitamin B12, and gives the pure vitamin its pinkish-red colour.

You also say that comfrey is the sole source of B12 available to strict vegetarians. Comfrey is one of the "higher plants" or "green plants", and as such cannot make vitamin B12.

If some scientist measured comfrey for B12 and found some, the reason probably is that some soil was contaminating the leaf, or the leaf was partly rotted by bacteria or fungi by the time it was measured. Soil is normally rich in B12, due to the abundance of bacteria and moulds in (healthy) soil.

But green plants cannot absorb this soil-B12 up into their tissues — probably because the B12 molecule is so very big.

The root-nodules (bacteria colonies) found on the roots of most leguminous plants contain quite a bit of B12. This is made by the bacteria living naturally inside these nodules, and is apparently needed by these nitrogen-fixing bacteria.

The vitamin B12 available in pure crystalline form from pharmaceutical companies is made either from a bacteria or a mould these days. It costs about $10 to $20 per gram — but as one only needs a microgram (or so) a day, and there are a million micrograms in one gram — one person can live for 100,000 days on one gram, allowing 10 micrograms per day.

Or 100 people could live for 1,000 days (about three years), on this one gram. So B12 is very cheap, really!

Cattle, sheep, goats etc. are normally strict vegetarians (unlike free-range chooks or pigs). Yet we know that meat or milk from cattle, sheep, goats etc. contains worthwhile amounts of B12, viz "animal protein factor". The animal body itself cannot synthesise B12!

Well, how come there's B12 in meat and milk from "vegan" farm animals?

The answer is simple. Cattle, sheep and goats are ruminants, that is they have a large "first-stomach", containing millions of bacteria, which break down protein and cellulose for the animals' benefit, and which also synthesise B12 in considerable amounts. This B12 is later absorbed into the ruminants' blood-stream, and so finds its way into their meat and milk.

All the other vitamins, essential fatty acids, and essential amino acids (in proteins) are made by plants — so we see that Homo sapiens can be completely nourished from the plant kingdom.

Sincerely, J. A. Lane, Wyee, NSW.

Dear Keith & Irene,

Do you know of the great help which honey can give to the healing of a cut or burn? Honey has the power of attracting moisture to itself, and if applied liberally to the injured part for at least half an hour, the wound heals without a scar. It is best applied as soon as possible after the burn or cut has occurred.

Several years ago I fell asleep in the sun and was burnt across the back and down the back of the legs, all very sensitive areas. That night I plastered honey all over the burn, and as a result suffered no soreness or blisters whatsoever.

As we are a vegetarian household, I read with interest your editorial comment in EG2: "At the moment we're veering towards vegetarianism — but we still haven't been convinced of its benefits."

Only 2 or 3 weeks ago my husband and I were invited to speak to a group of people who were vitally interested in health and wholeness, on the subject "Why we became vegetarians and how we benefited".

Just as a gardener, who works with nature in the cultivation of his plants and trees, thrills to the sense of living in harmony with his garden and being its caretaker, so the vegetarian is alive to the awareness of being in harmony with sentient life.

To the vegetarian, natural living embraces being caretaker to the animal kingdom as well as to the vegetable kingdom. There are so many healthy life vegetarians that it is well proven that it is not necessary to kill for food. Maybe the day is not so far off as some imagine when to take the life of an animal for food will be considered just as much an act of cannibalism as it is now regarded to take the life of a fellow human being.

Yours sincerely, Lilian Deason, Subiaco, Western Australia.

Dear Irene and Keith,

Thanks for a really marvellous publication. Please keep it up.

Do people really cut up the back page and use it as an order form? I couldn't.

P.S. To be purely vegetarian is bloody stupid. Man is omnivorous. Meat also has its values. In the animal kingdom, many mammals classified as vegetarian in fact also eat meat.

Take our native possums, the gliders for example. The Sugar Gliders, Petaurus creviceps, though their prime diet is blossoms and sap, will also take the occasional insect, bird or rodent.

Without the ability to do a scientific analysis on food values, as we might, instinctively they will eat what is needed. And that includes meat occasionally. The reverse of course also applies to carnivores. It must be remembered though, that man is in fact omnivorous. To live differently is to change one's own biology.

What's more, meat is also enjoyable. Why deny yourself? Don't be swayed into a total vegetarian way of life. Have both. Be omnivorous. Be what you are.

Henry Janssen, Fairfield, Victoria.

the cycle

It's now a year since we conceived the idea of EARTH GARDEN and began to make that idea a reality.

On the cover of EG1 we used a Moroccan woodcut of Adam and Eve (Thanks Kenny!). We think it's right to close the year's cycle with a similar cover illustration (Thanks Robyn!).

Looking back over the four issues you'll see we have expanded in size and in the range of subject matter covered by our "natural living and growing" tag.

People have been our first concern. People like Abigail and Neil Douglas (EG2) and the people who are going back to the Earth and leading the simple and more natural life we've been talking about. People, like you, our readers. It's people that can change the world.

After that, the main areas of interest seem to be natural farming and gardening, biological controls and companion planting, the bush, food and diet, animals, shelter and domes, flowers and herbs, handicrafts, and the ecology and related subjects.

The Key to wholefood and other sources, and book reviews are being checked and re-evaluated regularly. We'll continue to let the range and depth of our articles expand as we ourselves learn and grow.

At first we thought our audience would be a specialised and very limited one. We're happy to find that our ideals appeal to a wide cross-section of Australians and span varied political outlooks and the generation gap.

In the letters we've received we've found a genuine concern at the pace of life and the abuse of pollution as well as a yearning for a more simple lifestyle. This interest is much stronger and more widespread than we had thought at first.

We've received a lot of encouragement from Robert Rodale, editor-publisher of the US magazine Organic Gardening and Farming and from groups like the Organic Farming and Gardening Society and the Henry Doubleday Research Association.

Thanks again for your letters. We are still seeking your stories, leads to sources and information and feedback on what we've printed. If you want people to know about something good, let us know and we'll tell them.

We find, strangely, that our "back-to-the-Earth" magazine ties us down to the city.

It's only between editions that we can really get out into the country. This time we hope to go to Tasmania, to meet the people there and see a part of Australia we haven't visited yet.

Later in the year, we hope to go north to Queensland.

Before this issue we spent some time travelling around central Victoria. One of the best parts of this was the couple of days we spent with reader-friends near Castlemaine.

There we found a real community spirit. The people were friendly, bartered their produce among themselves, and encouraged and helped each other in many ways.

The first day there we fell right into a "roundup" of black sheep, which were being taken to be dipped. Colin and Ursula took us to Mary's place, where a group of friends were helping herd her small flock of blackies into the back of a Volkswagen utility.

It took about six people, hollering, yelling and panting, to get the same number of sheep into the pen. Then the fun really began when they had to load Mary's Dorset ram, Despot.

The photo shows Despot after he was caught. That's Mary on the left and Colin on the right, both with a firm grip on his powerful horns. Mary's photo study of a more placid Despot is on page 32.

With Mary's sheep loaded we went to pick up Glenys and her three lambs and took them all to a bigger property nearby, where the sheep had their unwilling "swim".

By the way, does anybody know of an "organic" sheepdip, or other natural treatments for domestic animals? Seems like something we should investigate.

It was great to see the varied approaches people in the area were making towards self-sufficiency. We met Sue and Tim who are trying to re-establish a 100-year-old vineyard. Meantime Tim makes furniture from old beer barrels to bring in enough income to attain his goal.

At Maldon we met Priscilla and Peter, who are raising ducks and selling organic eggs. Their daughter and two of her girl friends are building an A-frame house across the valley.

It was nice to meet you all. Hello to Benjamin and Daniel, who we didn't quite meet. They both arrived a week after we'd left.

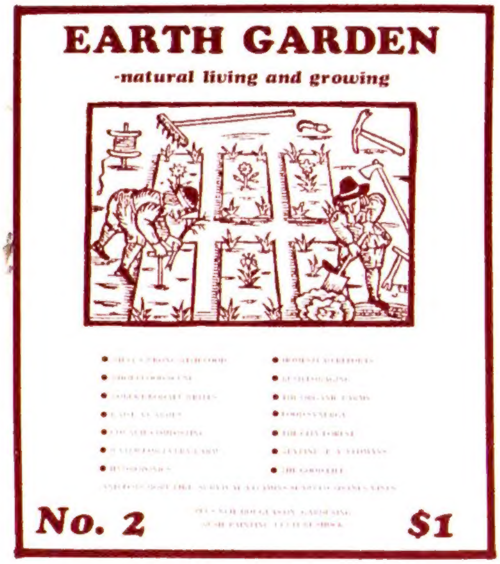
Peace and love
Keith and Irene

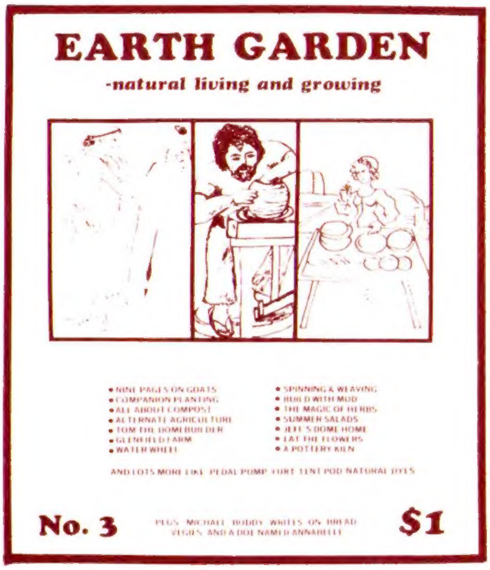
EARTH GARDEN 5

Raising poultry — chickens, ducks, geese and turkeys — will be the special feature of EARTH GARDEN No 5, out in May. Though we're still tracking down information, we also intend to tackle solar and wind power.

Help us get it together by sending in your stories and photos, leads, hints and suggestions.

Write to: Irene and Keith, EARTH GARDEN, PO Box 111, Balmain, NSW, 2041.





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